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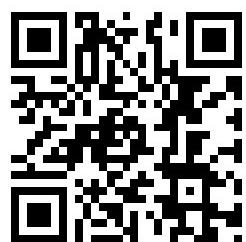
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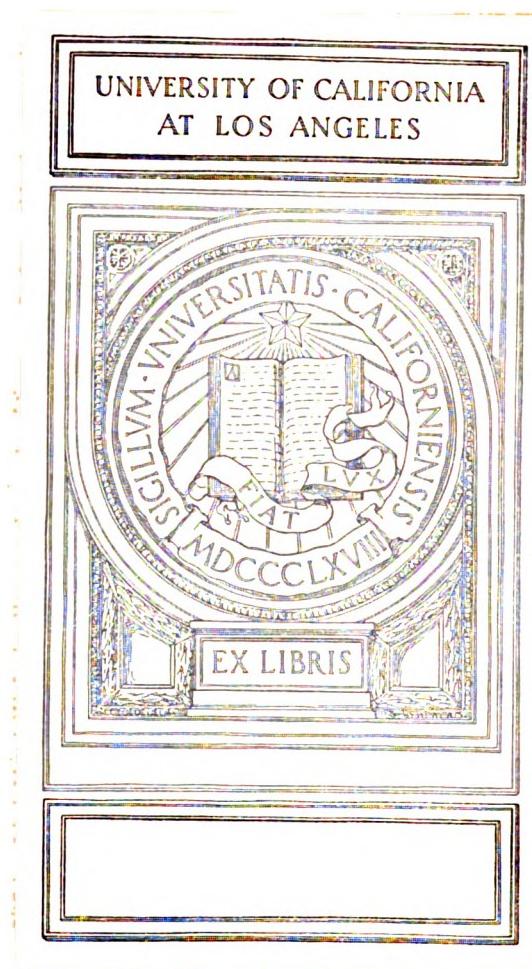
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# The School World

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# The School World

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SIXPENCE.

## WAR AND GOVERNMENT.

WE are entering a new calendar year, and we are naturally reviewing the past twelvemonth and asking what the new year may have in store for us. We make no forecasts; all the previous attempts in that direction have proved such miserable failures. We no longer ask, "When will the war end?" but, according to our various temperaments and characters, we look forward with more or less hope to the undatable conclusion. Last January, Bulgaria had but lately declared war on behalf of Germany against her enemy Serbia; this winter, Rumania has at last joined in the war on the opposite side, so that the whole Balkan Peninsula, where the hostilities began, is now involved: Bulgaria and Turkey against us, Serbia, Montenegro, and Rumania for us, while the position of Greece defies the possibility of exact definition.

To those of us who watch the course of the fighting, the war becomes more unparalleled than ever as the months go on. At sea, Great Britain maintains her position in spite of submarines, mines, and occasional raids, and, as we have now abundantly learned, "battles" at sea occur only when the predominant Power has to a certain extent failed to hold the enemy completely in her grasp. On land, we have had in the West battles lasting for months; and in the East, campaigns over large areas in which great tracts of country have been conquered first by one side and then, for some mysterious reason, by the other. Germany and Austria, fighting on central lines, have, on the whole, kept their dominions free from at least permanent hostile occupation, while the ring of their foes still holds them in a blockade. What may be the effect on their internal condition of this cutting off of their communications with the rest of the world we do not seem to be in a position to know for certainty, for reports are conflicting; but, judging from the action of the war on our

own economic position, we cannot but think they must be in a parlous condition.

The war, in its international aspects, is therefore without parallel in history, at least in its size and intensity; what can we say of its effects on our daily life at home? The most striking fact, perhaps, is that we realise, in a way that we have never before done so, that we all belong to the State. By that phrase we no longer understand merely that we are members of the Brito-Irish Kingdom and of the Empire thereto attached, but that we are its property, to do with as the State, not as we individually, think best. It has long been a commonplace with us that our Parliament, unlimited by a written constitution, is legally almighty; but we did not know practically that our lives and property are absolutely at its disposal. Now, with a taxation unknown for generations and a conscription law which revives medieval assizes of arms, it is brought home to us, in our own persons and in those of our friends, that all we have and are is "Caesar's." That, perhaps, is the greatest result of the war on our lives. Others we might name in descending order of importance. Our party system has disappeared, and though there are Cabinet changes, they happen over our heads and turn, not on matters of political party principle, but on personal issues between our various rulers. Parliament still meets for necessary business, maintains the ancient function implied in its name, and talks; but the talkers, especially the askers of questions, are not popular, and ordinary legislation is at a standstill. We understand now why the eighteenth century was so "barren" of law-making; it was a prolonged war period.

Owing to shortage of ships, men, and money, all required in our struggle for existence against barbarism, our articles of ordinary consumption have risen in price, and civilisation, in the sense of daily comforts, is necessarily going backward—indeed, has gone back already some fifty years. Our streets are

darkened, and though we do not employ boys to carry "links" (for the extinction of which those strange iron ornaments were made which we can still see in some West End squares), we use electric torches to be "a lamp to our feet." Incidentally, town dwellers have gained something by this darkness; we now know that the moon was made "to rule the night," "and the stars also."

It is also of particular interest to observe the results of the war on our national character and on education, both moral and intellectual. Our ministers of religion and others who are in a position to know say that we are becoming a more serious nation. They tell us that, though those outside the churches are showing no tendency to join them, the church-going population are displaying a greater realisation of the religion they profess. Certainly, those who are familiar with the Hebrew Psalms are beginning to understand more intensely than was possible before some of the prayers contained therein, and we no longer make objection to the verse in our National Anthem which speaks of "knavish tricks." The Israelite prophets, too, writing under the stress of attack by fierce Assyrian and Babylonian foes, often voice, to a degree remarkable for its adaptation to our present circumstances, our thoughts with reference to our agony. Our easy-going pre-war habits of thought and action have vanished into what seems a far-away past.

Intellectually, too, we are becoming more intelligent; teachers have found that lessons in geography and history have ceased to be, both for themselves and their pupils, merely "something we learn in school," and have become living realities; public lecturers have been told that what the public wants is information as to the past of our foes, especially Prussia, that they may understand this religion of hate and delight in war from which we are suffering. Even the very little ones in our elementary schools are brighter in their work. Is it because into their hitherto dull and monotonous lives something of interest, even of painful interest, has been imported? We know how keen was the intellectual life of ancient Hellas, where the State was everything, the individual nothing, and there was a condition of almost constant war. Which of us would, three years ago, have expected five-year-olds to know, much less use, the word "search"? Yet we have heard such "infants" speak familiarly of searchlights, to say nothing of Zeppelins, aircraft, and submarines.

Finally, the formation of the new Government, announced on December 11th, is an example of the elasticity of the British Constit-

tution. Men who are not enslaved by the spirit of political partisanship will regard the list of Ministerial appointments with hopefulness rather than with complacency. A limited acquaintance with committee work reveals the impotence, in an executive capacity, of a body of twenty-three. But, apart from the smaller War Council, chief interest centres in the appointment of men of special knowledge acquired outside of politics to important administrative offices. The new Presidents of the Board of Trade, of the Local Government Board, of the Board of Agriculture, and of the Board of Education; the Ministers of Labour and of Pensions; the Controllers of Food and of Shipping, are all men who have attained reputations as able and successful administrators in non-Governmental concerns; and it is anticipated that they will bring to bear upon their tasks the expert knowledge, forcefulness, and power of rapid decision which are so completely the needs of the hour. The fact that they are not merely politicians, with political reputations to make or to maintain, gives some hope of boldness and strength where, too often, there have been timidity and indecision.

So far as the purely business element of the Government is concerned, more reliance must be placed on this quality of forcefulness than upon the other vague, indeterminate qualities with which the business man is frequently supposed to be endowed. Too many factors enter into commercial success to render this alone a qualification for controlling a Government department. But it is essential for the success of the new Ministry that the departments of State should act upon adequate information with courage and resolution; and a Government department is weak and vacillating only when its political head is idle, incompetent, or fearful of his political reputation.

In one respect the new Ministers will meet with a fresh experience. Owing to security of tenure, promotion by seniority, a fixed age for retirement, absence of mobility in the Civil Service, and the theory that a man with an Oxford or Cambridge degree is necessarily a sort of Admirable Crichton, they will find men in responsible positions who, in private businesses, would never have reached their present position or would long ago have been superannuated. And they will have to struggle against a spirit which regards delay as of small consequence, and meticulous accuracy as a fetish.

The real test, however, will come after the war. For the present their activities will be subservient to the requirements of the War Council and the exigencies of the moment.

But when hostilities cease the still greater problems of reconstruction will have to be faced with equal resolution and without the driving force of necessity or the spirit of national unity which now renders their task one of relative ease.

## BOARDING-SCHOOLS AND DAY-SCHOOLS.

By J. E. KING, M.A., D.Litt.

Headmaster of Clifton College.

**I**N 1865 Mr. Goldwin Smith said: "We have received by tradition the system of the Middle Ages, when the family was comparatively little regarded, and when the boys were taken from their parents and subjected to a sort of half-monastic system. That I take to be the great root of the boarding-school system. If society were soundly constituted, and if the home was taught its duties, the day-school system would be best."

These words can hardly be accepted as they stand. As Mr. A. F. Leach has shown, the medieval grammar-schools were mostly day-schools attached to churches, and the teaching was done by the secular clergy. Charlemagne did try to attach schools to the monasteries, but the plan did not, it seems, last long. The monks educated their own novices, but they did not want outsiders. For instance, soon after Charlemagne's time there was a school at the monastery of St. Gall, and it happened that some of the boys required punishment. The boy who was sent to fetch the rods took a brand from the fire and set the monastery in a blaze. This sort of incident would naturally disturb the peace of a monastery and make the monks anxious to be relieved of secular scholars. Even when in the twelfth century many schools in England were handed over to the control of the monasteries the instruction of the boys was left in the hands of the secular clergy. As to the statement that the boys were taken away from their parents, it should be noted that in the thirteenth century Walter de Merton provided for thirteen grammar scholars of the founder's kin in his house at Oxford, that in the next century William of Wykeham provided for seventy poor scholars to live college-fashion at the grammar-school at Winchester, and that in the fifteenth century the "lady-mother and mistress of grammar-schools," in the college at Eton, provided for seventy. But such provision was the exception, not the rule. The bulk of medieval grammar-schools were like Shakespeare's school at Stratford-on-Avon, where first a room and then a house were provided for John Scholemaster "to teach grammar freely to all

scolars coming to him to school in the said town."

Again, it has been said that it is the Jesuits who are responsible for the practice of herding boys together in barrack-schools so as to mould them more effectively to the attitude of mind and the beliefs which it is desired to inculcate. This, however, is not the fact. "Day-schools," to quote from evidence given by Jesuit fathers, "are more in accordance with our Institute than boarding-schools." In England the Jesuits have had boarding-schools because parents seem generally to prefer them. What was the discipline of monastic schools? We can illustrate this by quoting from the Constitutions of Lanfranc—given by Mr. Leach in his "Educational Charters":

No youth is to talk to another except so that the master may hear and understand what is said by both of them; the masters are to sit between or in front of the boys so as to be able to see them; when they go to bed the masters ought to stand in front of them until they lie down and are covered up.

This is not the discipline of English boarding-schools, and would not tend to self-reliance or independence of character. We must not look only to the monastic schools for what is known as the public-school tradition. We must look at Alfred's school, where, "before the boys had strength for manly arts, namely, hunting and such pursuits as befit gentlemen, they were seen to be studious and clever in the liberal arts," and also to the schools maintained in the houses of the nobility—to quote Ben Jonson:

Where can he learn to vault, to ride, to fence,  
To move his body gracefuller, to speak  
His language purer, or to tune his mind  
Or manners more to the harmony of nature  
Than in these nurseries of nobility?

Religious piety was a primary object with medieval founders, and with men like Dean Colet and Bishop Oldham at the Renaissance, and with the Puritans after them, but they also wanted liberal discipline and instruction in the duties of life and manners. "Manners maketh man" is the well-known Winchester motto, and training in *mores* (manners and morals) was a leading aim in the education of the Renaissance, as we can see from the "De civilitate morum puerilium" of Erasmus and many other writings of his time.

Jumping the ages of educational repose, if not stagnation, let us come to the report of the Schools Inquiry Commission of 1868. The verdict given is that

for the upper classes of the community there is a sufficient supply of public boarding-schools and a very small supply of public day-schools; for the upper section of the middle class there is a smaller supply of

public boarding-schools and a very insufficient supply of public day-schools; for the lower section of the middle class and the upper section of the artisans there is almost no supply of public boarding-schools and a very poor supply of public day-schools.

Since 1868 there have been many changes. For one thing, there has been a great growth of day-schools. The old free grammar-schools—mostly poor—have passed away, and in their place—to mention no others—have sprung up such larger schools as Bedford, Manchester, and St. Paul's.

Fifty years ago it was said—no doubt with reason—that a good boarding-school was a more efficient instrument of teaching than a day-school. To the boarder his school was the world: its lessons, successes, failures filled his imagination and absorbed his thoughts and energies. Closer intercourse and joint preparation gave greater stimulus, and in a school where there were both day-boys and boarders the boarders, it was said, beat the day-boys. That could hardly be said now. Exclusive absorption in work is more often a danger at day-schools than at boarding-schools, and even in the days of the Schools Inquiry Commission there was work done at Birmingham that would have matched the work at Rugby or at Winchester.

If we take the learned professions to-day we shall find that the day-schools can claim at least as many eminent men as the boarding-schools. The stimulus of the approval or censure of relations and friends, the knowledge of the family circumstances constantly before a boy's eyes, closer acquaintance with the actual conditions of life from hearing the conversations of his elders, are likely to make a boy realise the need for effort and industry. In a large boarding-school there is rather a tendency to assume that all alike are in easy circumstances, and industry is more apt than in a day-school to be sometimes not a boast so much as a matter of mild apology or discreet dissimulation, as Ian Hay has shown in his book on the lighter side of school life. It is true that the boarder is at home in the holidays, but the holidays are a time of relaxation and rest rather than serious interest or endeavour.

The claim of the public schools is that along with work they give boys capacity to govern others and control themselves, an aptitude for combining freedom with order, a sense of public spirit, vigour and manliness of character, a strong but not slavish respect for public opinion, love of healthy sport and exercise in an atmosphere of social equality with the opportunity of forming enduring friendships.

Before the public schools, some of which as grammar-schools had local ties, had got

rid of these ties there was not always a sense of social equality. The local tradesman's or farmer's son on the foundation had often no happy time at school. "Why did you not send your son there?" a local farmer was asked by a Commissioner. "I was fearful," he said; "I did not like to have his legs broken." Some of us have met men so educated who hated the public schools and all their ways and customs. The boarding-schools are accused of encouraging caste feeling, and no doubt the feeling of having been at a public school gives a sense of freemasonry between all those who have been educated at similar institutions. On the other hand, boys at a boarding-school as a rule now know little and trouble little about one another's parentage or social standing, whereas in a day-school there is more knowledge of such differences and boys who meet in school may have little to do with one another outside the school walls.

Is there less of a sense of social cleavage in Germany, for instance, where boys of different social standing are educated in the same schools? Does the son of the Junker feel more kindly to a social inferior because he has sat on the same bench with him at school? Are there no social grades in America?

Little need be said about subjects of instruction, for in this respect day-schools and boarding-schools, as such, do not differ. The arrangements of the teaching hours may differ, but not the subjects of instruction. One school may send more boys to the universities, another into the Army, another into business, and the weight attached to various subjects may vary accordingly, but not because one school is a boarding-school and another a day-school, and one more scholarly, or more scientific, or more practical in its aims than the other.

The boarding-school has more power than the day-school over its members: its grip is closer and more constraining. The boy is alone, to make his own way and find his own place, and this helps to develop self-reliance and independence. There are temptations, but in a good school there is a strong public opinion to keep boys generally right, and also a tone of manners and a sentiment of honour. Not that the sentiment of honour belongs to one type of school or one class, as may be illustrated by the story of "Green-breeks" in Sir Walter Scott's account of the street frays in his early schooldays at the Edinburgh High School.

In a day-school the mingling of the elements is looser—mechanical we might call it as compared with the chemical combination of the boarding-school. Public opinion is less constraining and transforming. There are plenty of circumstances to develop character. A boy

may have to make his way to school across town or country in all weathers, to travel to school for an hour by rail, to live as brothers have done from an early age alone in London for their education, to study economy in travelling, feeding, and clothing, to puzzle out homework for himself, to work at a corner of the family table in a poor and crowded home. All this helps to train and educate, but more, it may be, after the fashion of Dr. Smiles's "Self-Help": it is the real world rather than the mimic world of school. A quotation from a modern novel seems to show a personal note of bitterness:

To the Grammar School B. repaired with a brand-new handbag and a quaking heart, to find himself one of 500 boys of all shapes and sizes and classes and nationalities and religions—the town in little. In his first term he was in the Lower Third Form, and sat between the son of a cabdriver and the son of a millionaire mill-owner. Games were not compulsory, and only one hour per week was allowed for them. What the parents wanted and what they got was a good, hard, thorough grounding, and no nonsense. There may have been an ideal in the place once upon a time (it was founded by a bishop), but that ideal had produced no offspring, and there were no little ideals to grow up with B.'s generation. . . . His career and mental development were exactly those of 95 per cent. of the boys who passed through the institution except that he suffered more from fear. Fear was the directing force of the machinery. The headmaster was a bearded man with a huge voice, with which he bullied his assistants. The senior members of the staff bullied the junior members, and without being given any standard of right and wrong the boys were punished, punished, punished; detentions, impositions, enforced drills, thrashings. The school was enormously successful, and everybody was immensely satisfied with it, though there was never a boy grown man who could look back with pleasure on the years spent in its toils. There were periodical attempts made to pump up the spirit of loyalty, *esprit de corps*, but they always flagged under the general listlessness. The only real education B. ever got was in his daily walk to and fro over the two miles that separated his home from the school. . . . Nothing was ever done to help him to understand the processes of his own existence or to direct the forces stirring in him. He was affectionate; no appeal was made to his affections; he was romantic; no food was forthcoming for his hunger. Spiritually and emotionally he was starved; mentally he was grossly and unsuitably fed.

This is, no doubt, a jaundiced picture, but still it does illustrate some of the difficulties of a big day-school where the boys come—many of them—from a distance and cannot have what we understand as school life and its interests apart from the actual teaching hours of the school. It is not easy to have games in the heart of a big manufacturing town: it is

not easy for boys to learn to govern one another when after school they must disperse to the four winds: it is not easy for boys to form friendships when most of them see one another only in the classroom. All the same, common interests, loyalty, public spirit, and even games need not, and, as a matter of fact, do not, flag in the way that is represented in the passage that has been quoted. The day-school need not be, and is not, what a French writer has said of his *lycée*, "Ah! the horrible place." But in the day-school described the solidarity must be weaker and the interest less intense than in a great boarding-school.

Solidarity, no doubt, has its drawbacks, and the tone of a boarding-school may be low. In a good home boys can be kept from evil and knowledge of evil to a great extent. It is a shock sometimes to boys educated at a day-school to go to the university or elsewhere and learn of evil of which they had not heard or dreamed before. The question is: "How long should virtue be cloistered?" Day-boys whose school-life has been irreproachable have at times succumbed to the greater freedom of the university, in which the boarder, more inured, has kept his feet. Similar results would follow from Lanfranc's rule. If masters were always with boys—in the dormitory before they got up, throughout the day, in recreation time, and at night until they were asleep—the boys would be babies when they left school—innocent maybe, but ignorant. The evils of a cloistered education are either the intense slyness of successful evasion or a dangerous ignorance. When Cowper wrote in the eighteenth century:

Would you your son should be a sot or dunce,  
Lascivious, headstrong, or all three at once,  
Train him in public with a mob of boys,  
Childish in mischief only and in noise,  
Else of a mannish growth and five in ten  
In infidelity and lewdness men—

he was thinking not only of boarding-schools, but of day-schools too—in fact, of all public education of boys. Schools differ, houses differ, masters differ; so do homes and parents. Assume a cultivated home and a family of brothers and sisters, with parents not too much occupied to look after their children and be interested in their work and play, and then with a father, friend, and tutor all in one, there can be no better education than a day-school. But there can be homes very different from this, and an unruly boy in an undisciplined home has greater opportunities for mischief than in a boarding-school, though perhaps less scope for influencing his school-fellows. Only sons, neglected sons, and sons whose parents are abroad are better off in a

boarding-school than a day-school. To quote again from Cowper :

Art thou a man professionally tied,  
With all thy faculties elsewhere applied?  
Or art thou (as perhaps though rich thou art)  
But poor in knowledge—having none to impart?

or :

If thy table be indeed unclean,  
Foul with excess and with discourse obscene—

or :

is thine house,

If not a scene of pleasure, a mere blank?

or :

Hast thou a polite card-playing wife?

then in such cases it is better for parents not to have their sons at home, but to send them away. It is quite possible for parents to be selfish and neglect their children. Most masters of day-schools have had experience of ill-regulated homes from which the children have to come to school with little or no breakfast, or where no provision is made for doing homework. And again, there are homes where children are spoilt, where they are unduly helped in their work and the whole tendency is to evade the requirements and discipline of the school. Many observers have remarked upon the tendency in modern times to throw more and more upon the schoolmaster not only in intellectual matters, but in moral and religious training too. This tendency shows itself in the day-school as well as in the boarding-school. The vast number of conflicting instances makes it difficult to prove the tendency which has been deplored, and we are probably much at sea in comparing the present generation with the past. All the same, the difficulty felt by many parents in giving religious instruction, the increase of social and other enjoyments and the multiplication of the means of pleasure—at any rate before the war—help to support the belief in a decline in the sense of parental responsibility.

Day-schools need not be in places where the boys have far to come, as happens in London or in large industrial centres. They may be situated in places where parents come for the sake of education and live close around the school. Then what is known as the public-school spirit can more readily flourish: the boys can better manage their own affairs; have real authority as monitors; build up and obey their own traditions and form a close community. The school, too, can exercise more control over the movements out of teaching hours, fix its own lock-up hour, and have its proctors and other institutions. Parents are ready, as a rule, to fall in with such arrangements, because they realise that they

are being helped, and parental weakness is a thing not unknown. A parent has been known to send a note by his boy asking for leave of absence, and then call to beg that the request might not be granted, as the boy had coerced him into writing the note. Discipline is more troublesome in a residential town with a population less occupied than in an industrial town where people mean to have their money's worth. There are widows striving to cope with growing sons; there are idle girls, who have left school, for whose hands much mischief can easily be found. Disciplinary trouble is not a monopoly of either the day-school or the boarding-school.

There is no reason why the day-school and the boarding-school should not be combined, as indeed they often are in different proportions. The two systems can react on one another favourably and harmoniously, but it is advisable that neither day-boys nor boarders should be so few that the one can look down upon the other. The boarding-houses form a nucleus, and the day-boys, if numerous enough, can themselves be divided into "houses" of their own for games and other purposes, and so gain a measure of the solidarity and sense of union which bind the members of a boarding-house together. Another plan is to divide the whole school into "houses" composed of both day-boys and boarders and make both members of the same "house," and this has proved an excellent plan. The day-boy has his home and his home interests and intimacies and the greater freedom for arranging his own time and providing for his own tastes that this may allow, while the system of "houses" makes him a member of a community to which he owes feelings of loyalty and comradeship, for which he is expected to do service at the cost of some self-sacrifice and for whose welfare he can feel enthusiasm.

These systems do not rob boys of their individuality, even if one of their main objects is to secure the welfare of what Bagehot has called the ordinary "apple-eating" boy. Mr. Curtin, in his experiences of Germany as a neutral, has told us in the *Times* that the governor of one of the German prison camps complained that the English prisoners caused more trouble than all the rest because they were so different from one another. British boys have the characteristics of their countrymen and do not readily lose their individuality. A boy with a taste for observing birds has been known habitually to cut his cricket to enjoy his favourite pursuit. This involved a penalty from his fellows which he was prepared to pay. He never resented the penalty; they punished him without ill-feeling, and both sides were right.

Under the older grammar-school education of a past generation boys were taught their Latin and Greek, and for other tastes were left to themselves. The modern school has gradually extended its grip to other subjects and pursuits. Schools have their scientific societies, their music and other interests organised like their games and their military work. Little space is left in term time for the individual hobby. But there are always thirteen weeks of holiday, and the complexity of school has grown with the growing complexity of society.

So far we have chiefly considered larger schools, and perhaps, with Plato, we can see best what we are looking for in the larger characters. Obviously we cannot have in smaller schools some of the advantages of larger schools. And yet the smaller schools have a history of their own. We do not now approve of dame's houses. But Wordsworth boarded with other boys in a cottage to attend a small northern grammar-school. They set snares for woodcock, hung on the perilous ridge bird-nesting, hissed on steel along the polished ice, fished in the streams, and swept along the plains of Windermere with rival oars :

Fair seed-time had my soul and I grew up  
Fostered alike by beauty and by fear—

getting a training for which organised games are not the fullest substitute. One of Captain Scott's last messages from the South Pole about the education of his son was "Natural history rather than games." Better, no doubt, than what we sometimes come to under the fostering care of the sporting Press. To quote a modern school story :

Their mother would have liked some of her sons to enter the public service as soldiers or as sailors, but Jumpy, Flip, Pads, and Bingo—as they were known throughout England—felt that the Services gave little opportunity for first-class cricket, and refused to spoil their lives by lowering the standard of their games.

That was so before August, 1914. Now, first-class cricket is gone and some of its heroes lie in the soldiers' cemeteries near Ypres, or in Gallipoli, or by the banks of the Tigris, and have proved their manhood in a sterner game.

At their worst it may be said that organised games have banished bullying from schools and other idle mischief which prevailed in previous generations. Their merits at their best it is idle to discuss.

"Among the many institutions in England none is more exposed to the barbs of the critic than the 'public schools.'" We are told that the majority of boys leave our schools without intellectual interest, without religious principle, and without the sense of service that will develop into the larger public spirit that

society needs. Their aim is professedly what it always has been—a training resting on religion, *mores* in the sense of character and manners, discipline in liberal studies. That aim may not be fully attained. Has it ever?

In 1644 a writer begins : "When I consider the great expense of time, expertise of many years, and very seldom to any purpose, may be a little smattering of Latin and less of Greek . . ." The words seem to be a quotation from an essay of Mr. A. C. Benson.

To embark upon a discussion of the saving virtues of a changed curriculum is, however, a digression from the question of day and boarding schools. After the various comparisons that have been made an answer should be given to the question : "Which is best?" But is that possible? As Dr. Johnson said in answer to some such inquiry, the question is perhaps not a general one at all, but what is best for me and my circumstances and what is best for my particular son? And parents, sons, and circumstances vary very widely. The boarding-schools meet the needs of a large section of English society. Day-schools are necessary, and they have learnt much in recent times from the spirit and traditions of boarding-schools and adapted them to their own needs. It is to be hoped that such a process of adaptation will extend, and that the best elements of the English "public-school" spirit will run through all English education to the elementary schools.

#### A POSSIBLE REVOLUTION IN RURAL EDUCATION.

By CLOUDESLEY BRERETON, M.A., L.-ès-L.

PERHAPS we may describe that magnificent movement known as the Boy Scout movement as the successful revival for young people of the *nomad* type of civilisation, or, rather, the adaptation of the arts and crafts of the nomad (hunter, woodman, etc.) to educational ends. Another movement seems to be growing in America which promises in a way to be equally successful in initiating boys and girls from nine to eighteen into the mysteries of pastoral and agricultural life by means of so-called "Industrial Clubs," which so far as their aims go should rather be called "Agricultural" or "Country Life" clubs, since they do not deal so much with industry, in the English sense, as the production and marketing of rural produce.

These new organisations are to be found right across the continent of America. They extend also to Canada, but at present are less highly developed in that country. The description given below of their work seems to indicate that, making allowances for differences of con-

ditions in England and in America, here is a most valuable system for giving country children an interest (economic as well as cultural) in their surroundings by encouraging them to devote their leisure to what will afterwards be the life-work of the majority, and so providing them with a foretaste of, and initiation into, the skilled side of the calling they will have to follow. Probably the unit of cultivation would have to be smaller in this country, but those who had grown corn or vegetables, raised pigs or poultry, gone in for seed-growing, apple-growing, fruit-bottling or bread-baking, homecraft or home beautification, to mention only a few items, would carry into their adult life an ardent desire to better themselves. In fact, no more suitable preparatory training could be desired for the future smallholder or for interesting women in the land.

This practical training in economics would do more than plastering many vacant spaces of this country with exhortations to save. The hoarding could take place at home; there would be no need of the "hoarding" outside. Again, the increase in country produce is not without importance at a moment when food prices show every indication of steadily rising, while the renewed interest in the countryside would extend to all its aspects and remove from it that dreariness and aimlessness that beset the life of those who have no stake in the country, and revive that community of interests which is now only partially catered for by the reading of newspapers, which pay but little heed to countryside questions.

The indirect effect on the rural school would also be highly beneficial. It would give the wise teacher a mass of concrete experience to which to appeal. It could also give an immense impetus to the extension of the school garden. If these clubs were able to grow and extend, as the Boy Scout movement has grown and extended, and some degree of the co-operative element could also be introduced, the rural problem would be largely solved, provided, of course, that we could find another Sir Horace Plunkett to lead it. It is not by mere external legislation, however valuable, that great reforms can necessarily come to pass. They are inevitable only when those who are directly concerned desire and determine to ameliorate their surroundings and conditions. Such clubs, if a success, would supply the necessary stimulus for rural betterment. We have not in the past caught our future self-reformer young enough, but have concentrated on the adult. Sir R. Baden-Powell and other great educators have, however, brought home to us the need of starting with the younger generation.

I am indebted to Miss Alice Ravenhill, one

of the leading pioneers in the teaching of hygiene and domestic economics in the country, and now a member of the Advisory Board of the Women's Institutes of British Columbia, for the following notes on the organisation of these clubs with special reference to the State of Oregon.

The organisation is elastic in its framework; intentionally so, in order to permit of suitable local adaptations; but its broad outlines are similar throughout and have been proved generally satisfactory. The fact of personal acquaintance with the methods and results of these Young People's Clubs in the great western agricultural State of Oregon leads to their selection as types of the organisation they represent, though doubtless elsewhere there are others of equivalent merit, which may offer features unrepresented in this instance.

The objects of these clubs are to interest boys and girls in rural life; to train them in systematic, careful, productive work; to cultivate businesslike habits; to guide them, under expert supervision, in the best methods for pursuing that work, and to show them the *economic* worth of their efforts. Any child between the ages of nine and eighteen, whether attending school or not, may enrol for one or more of the subjects listed for the purpose by the State Superintendent of Clubs, who keeps in close touch with individual members, even in the most remote districts, maybe 150 miles from a railway, through his assistants—State leaders, county leaders, school inspectors, and local representatives. There are clubs for the growing of potatoes, or of fruit, or of five different kinds of vegetables; or the club member may undertake the completion of three or more farm or home "enterprises," designed to save labour or to be otherwise useful. Girls compete as well as boys in all the thirteen different lines of work, although three are directly framed for their special benefit—canning (*i.e.* fruit, vegetable, and meat "bottling"), sewing, which is not a school subject as it is in Great Britain, and baking.

Membership is secured by the fact of enrolment in a club, the necessary form being provided by the local school teacher, this form being then forwarded to the State leader of club work at the State Agricultural College. The rules and directions for the special object selected are at once forwarded to the new member, who is strongly advised also to attend as many "industrial" club meetings as possible in his or her neighbourhood, where a programme of general interest is planned a year ahead, and serves to maintain the interest as well as to further the general education of the members. Each member is furnished with

an admirable leaflet defining the order of procedure at public meetings and the method of conducting a discussion, and a wide range of suggestive programmes is provided to guide the young officers in their choice of subjects.

The club leader (whose functions recall those of the scoutmaster) is preferably an adult; games and simple competitions are frequently introduced; speakers from neighbouring towns are invited to lecture; and some of these club meetings testify to the possibility of making attractive and profitable a life often condemned as dull and restricted because of the distance from city excitements.

Obviously the conditions to be observed in this club work are carefully defined. Thus:—

*Potato-growing Project.*—The growing of the largest crop at the least expense. One-eighth acre the basis.

*Vegetable-gardening Project.*—The growing of the largest amount of vegetables at the least expense. One-sixteenth acre the basis.

*Poultry-raising Project.*—Division I.: The care and management of five or more laying hens for a period of at least six months, the incubation of at least one setting of hen's eggs, and the care and management of the chicks for a period of at least four months. Divisions II. and III. detail the regulations for the corresponding care of turkeys and ducks.

*Fruit-growing Project.*—Division I.: The management (detailed) of ten bearing fruit trees. Division II.: The management of ten square rods of small fruits.

*Baking Project.*—The completion of ten lessons in baking.

*Canning Project.*—Division I.: Canning for home use. Division II.: Canning for the market.

Immediately on enrolment a complete set of instructions and forms is sent from headquarters to the new member. These include, say in the case of fruit-preserving, a copy of the general rules governing all club work, and carefully worded directions how to set about the special work selected, thus: "Your object is the completion of ten lessons in canning and the use of canned foods. Enclosed are instructions for lesson No. 1; when you have completed this lesson fill out the report card and post it to the State agent. It will require no postage. Each time a report comes in you will be sent instructions for lesson No. 2 and another report card."

This report card serves as a check on the work done, and safeguards, so far as possible, that it is the unaided work of the member. It is planned to be filled in with the number of the lesson completed, the date of dispatch, the name, age, address, and club of the mem-

ber, together with replies to a series of questions on the work accomplished: the time required, the materials used, the apparatus, the cost, etc.; finally, space is provided for the signature of the parent or club adviser, attached to the following words: "I have examined the above report and find it correct."

No time limit is set for the completion of any lesson, but no new instructions, whether for potato-growing, poultry-raising, or bread-making, etc., are sent out until the previous lesson has been finished and the report sent in. A check is kept at the office of the State superintendent of the work of each member, and if too long an interval elapses between the receipt of two reports, a card of inquiry for the reason is sent out—a method which stimulates many half-hearted workers; though, naturally, a considerable percentage of those who enter these clubs drop out before they complete their undertaking. Each year, however, reduces this proportion of slackers, some of whom are quite often encouraged to try a second year, when their perseverance has failed them at their first attempt. The frequent visits of the State superintendents, known as State agents (a woman in the case of the sewing, baking, and canning clubs), prove an admirable stimulus to the juvenile workers.

To return to the directions given to the newly enrolled member. These include instructions to make a card or wooden box to hold all the sheets of directions, records, etc., without folding, and the young worker is told to keep the record sheet of work accomplished in a place convenient of access, so that the entries may be made promptly to ensure accuracy. A final report has to be prepared by the worker at the close of the course, which necessitates for its preparation the previous careful keeping of the record sheet of daily work, thus again safeguarding the method of work being purely individual and unassisted.

The products of local clubs are submitted at intervals to the inspection of appointed agents, and a selection is made from these for display and competition at the State Fair (Agricultural Show, as we should call it), which is held each September. In every case the judge pronounces in accordance with an officially drawn-up "score." Thus, again to use "canning" as an illustration, awards are based as follows: Quality of canned product, 20; quantity of canned product, 20; profit on investment, 20; appearance of canned product, 20; best final project report, 20=100. Such an exhibit must consist of two glass jars of two varieties of fruit; two glass jars of two varieties of canned vegetables; and two jars of two varieties of canned meats.

All the prizes except the first consist of small

sums of money; but the first prizes are indeed covetable: they consist of three days' visit to the autumn exhibition, free of all cost, under the care of an appointed supervisor or matron; or two weeks of summer school at the Oregon State Agricultural College, where every opportunity is offered, not alone for suited short courses of instruction, but for creating an appetite for further study—an appetite so intense that it will incite to sustained efforts to attain what is necessary to its gratification.

Another valuable element in these clubs must also receive mention. The young folk are not only trained in the mere performance of these handicrafts, but receive instructions how to utilise their products most profitably to health and pocket. The canning girl has a sheaf of suggestions for the making of salads or the preparation of vegetables for the home table, the sewing girl is similarly stimulated in her department, and the young poultryman or woman or agriculturist is guided to the marketing and worth to the country of the results also of their industry.

Is not this an organisation worthy of that sincerest form of flattery—imitation? The working expenses are calculated to amount to about 3s. 6d. per head—a really sound investment, surely, whether looked at from the point of view of health, of economics, of education, or of efficiency.

#### A BOYS' SECONDARY SCHOOL IN WAR-TIME.

By a HEADMASTER.

**T**HREE was once a headmaster who, though otherwise moderately human, had one fault. Immersed in books and boys from his youth upwards, he had conceived a great reverence and, it must be confessed, a great awe for the opposite sex. Then there came an event which completely shattered and splintered the whole of his scheme of existence—an event which left his mind confused, battered, and dazed, as if by a heavy physical blow. This event was a war.

The autumn term, 1914, was a memorable term in most schools, and nowhere more so than in the establishment of which we are writing. Even before the term had begun half a dozen of the assistant-masters had rushed to join the Forces. The opening of term saw a new spick-and-span time-table, which had cost a month's labour, irretrievably ruined, a considerable portion of the teaching staff missing, the caretakers under arms, and the school entirely disorganised.

Then began a strenuous month, in which

the vacant places had to be filled (with more haste than care), a new time-table drawn up, and a turbulent and excited school calmed down. It was an eventful month. Schoolmasters up and down the country were flocking in their thousands to the Colours, offering themselves as living examples of the corporate spirit they had upheld and fostered in their schools. It was not surprising that, under these conditions, our headmaster could not find sufficient qualified men for his vacancies, and sooner than appoint an ill-qualified master he thought it advisable to try the experiment of a lady teacher.

This was, indeed, an upheaval of all his ancient principles and prejudices. To admit into the sacred celibacy of the school a member of the opposite sex was a great shock to his susceptibilities. He shivered with apprehension, but noticed with surprise that the rest of the staff were apparently enjoying the situation. The lady was not unprepossessing, and the men vied with one another in their attentions. If any duty were given to the lady which might be considered at all oppressive, one of the masters would be sure to carry out that duty in her place. So that, as a member of the staff, the lady had a varied and enjoyable existence. As a teacher her fate was not so pleasant. The boys deeply resented the foreign influence in the school, and conducted themselves as young barbarians will under such conditions. Perhaps the least said about that the better. The situation was becoming embarrassing, but it solved itself by the departure of the lady, in order to enter the bonds of matrimony, in company with a brand-new officer, leaving behind her a row of temporarily broken hearts.

Meanwhile, however, another event happened, which came as a climax to our headmaster's woes. Every schoolmaster of military age, which included the entire staff of this school, was officially informed by the highest representative of education in the land that the time had come to stop schoolmastering and start fighting. Almost as a body all the men who were medically fit obeyed the call and departed, leaving their Head staggering under the blow.

In the circumstances he did what every self-respecting citizen would do. He cursed the Government with might and with main. He cursed them in their goings-out and their comings-in, in their homes and in the open places. Then he found he was wasting time, so he stopped cursing and started to pick up the pieces.

Incidentally it was found necessary to appoint more ladies, a whole company of ladies—a round dozen, to be precise. Fortunately

the school was spacious and there was ample accommodation for them. But the boys resented the new appointments; they became noisy, rough, boisterous. Thus began the first real war-time problem.

In this particular school, liberty had always been the watchword—liberty for the staff to promote their own ideas and to exercise the influence of their own personalities; liberty to the boys to develop their own individualities. This liberty had now to go by the board.

The disciplinary system of the school was so altered that the boys were never left alone. In the classrooms, the playground, the corridors, the cloakrooms, they were kept under constant supervision. Masters, mistresses, and prefects kept watch and ward, and woe to the transgressor! Freedom was gone, discipline was restored, and the headmaster was very unhappy.

However, he sat still and looked around him, and awaited events. The work of the mistresses was certainly excellent. The educational progress of the boys was maintained to a marvellous degree. But as the term passed away he noticed that the ladies of his staff began to look pale and worn-out. This surprised him vastly, for, as you will remember, he was desperately ignorant of the sex. Towards the last month of term three or four of them broke down altogether, casting extra work on those who remained, in spite of the help of "supplies." The school just crawled through the remainder of its first term under the new conditions, and then the staff collapsed into their vacation.

Next term began, fresh and fair. The first difficulties of discipline were over, and the school behaved itself fairly well, though the rigid semi-military discipline was irksome. But as the weeks wore on, the phenomena which the headmaster had noticed amongst the mistresses began to make themselves apparent once more, and soon after half-term the inevitable collapses occurred. Then a great truth dawned upon him—that women had not the physical strength of men, that they could not endure the same mental and nervous strain. This fact came as a great surprise to him, but, having fairly sunk into his mind, he set himself to discover what should be done.

First of all, he determined that he would overcome his nervousness of the sex, and would endeavour to learn a little more of their views and opinions. He did so, and before long some of the ladies would spend a free period chatting with him in the room which was, by courtesy, termed his study. He encouraged them to talk freely and openly of their experiences and troubles, to talk of the boys, of the school, of their work. Sometimes

he heard things which surprised him. One young lady, who had recently left her training college to take a junior class, informed him that his system of organisation was wrong, root, stock, and branch, and that not one of the syllabuses left by his heads of departments was based on really educational principles. This was refreshing. It did him a great deal of good.

His conversations, however, proved very fruitful. He began to perceive not only that ladies cannot bear the same strain as men, but that they were sadly handicapped in two particular ways. First, not being able to take part in the games of the boys, they saw only one side of their abilities and character. Secondly, through the anxious conscientiousness of the sex (you will perceive that our headmaster was learning), they wearied themselves with lengthy and unnecessary corrections, when they ought to have been taking exercise in the open air.

So he set himself to overcome these disadvantages. The task was not difficult. Summer was at hand. The cricket-field was enticing, and its surroundings delightfully rural. To conclude matters he installed tea in the pavilion, bought a number of garden-chairs, and asked his wife to give a hand. The plan was a complete success. On fine half-holidays there were rarely fewer than a dozen to tea. The mistresses became cricket enthusiasts, and their relations with the boys underwent an almost immediate transformation.

The matter of corrections was a little more difficult. The ladies did not like to abandon what appears to be a besetting mania with the sex. However, by dint of a series of lengthy personal interviews, the headmaster was able to demonstrate how much time might be saved in the matter of correction without any loss of efficiency; and gradually the ladies became reconciled to their fate, and fewer hours were given to the exercise-books.

There were not so many collapses this term, you may note, and there was genuine regret at the close of the cricket season. It may also be observed that the results of the midsummer internal examinations were most gratifying, and in the public examinations taken by the school there were no failures at all—a remarkable testimony to the effectiveness of women teachers in a boys' school.

Then came the autumn term, and with it a visible improvement. The school was happier, merrier, and less reserved. With the influence of the cricket season behind them, some of the ladies began to take an active part in the winter life of the school. You would find them in the debating society, the choral society, in the orchestral or in the dramatic

club; they would even come and watch the boxing, though sometimes it was obvious that their feelings of interest were mingled with horror, particularly when the bouts were gory.

It must not be thought that all this time the same twelve ladies remained on the staff. One took a husband, another achieved a permanent appointment, a third and fourth removed to a different sphere. Newcomers took the vacant places, and the same processes had to be gone through again. But they were no longer problems. The headmaster had now learnt a great deal. He began to think himself very wise and experienced.

By the close of the autumn term he thought that the whole of his difficulties would be solved. But he was entirely wrong. The distressing truth was that there were just as many collapses this term as ever.

He smote his beard, cast ashes upon his head, and pondered. What was the cause of this failure? Why was there such a striking difference between the summer and the autumn term? The only and obvious solution seemed to be that the ladies had too much work and not enough fresh air and exercise. While the men spent their spare hours on the football field, the mistresses spent theirs in the classroom. Yet ladies cannot be expected to play football, or to stand ankle-deep in slush on an icy touch-line.

What was to be done? It was apparent that the ladies were still working above their strength. The work and discipline of the school had improved wonderfully; but even with all the improvement in the relations between the mistresses and boys, there was still an undoubted nervous strain in the maintenance of good order and of the educational efficiency of the school. Should this efficiency be sacrificed? Should the school hours be lessened and the syllabuses be shortened? No, anything but that! There must be no weakening in a time of national stress. What then? The only way out of the difficulty would be to increase the staff. This would mean more money, and to get more money for an educational purpose in war-time is like extracting fluid from the proverbial stone. It was not less difficult in that the staff had already been reduced as a war economy.

Still the headmaster did not despair. He set himself to coax and caress, to pound and to pommel his governing body, until in the course of two terms he dragged from them the appointment of two additional mistresses.

Then he sat down to compose a new time-table, with much the same feeling in his heart that Mozart would have sat down to compose a new sonata. That time-table was a thing of joy to him for many weeks. It took up most

of his summer holiday, but he did not mind. By this time he had become addicted to time-tables, and the new time-table was to be his masterpiece. It was to be a kind of lucky bran-tub, from which everybody should draw a prize.

He began by increasing everyone's free periods, not with the object of providing more time for correction, but rather more time for walks and outdoor exercise. If a mistress had a large class, she received an extra half-holiday a week. Teaching thirty healthy and vigorous young barbarians is no light task! If she had responsible work in the upper school, perhaps she found herself with an extra couple of hours on one morning to rest a little longer before starting the day's work. One of the new mistresses was given no class duties in order that she might go round the school marking different registers every morning and afternoon, in order to render it unnecessary for those with free periods at such times to return until they were needed for teaching purposes. Then the sergeant was a big, strapping fellow, even if he had lost an arm at "Wipers." He was to do all the supervision, although he should have his due reward for it. And so on and so forth, until the work was lightened all round for everyone, each according to his needs.

The new time-table came into force at the beginning of the school year, and it fulfilled all the expectations of the author of its being. There were no collapses at all. There was not even a symptom of a collapse. The staff were fresher, and the work was better than ever; and the headmaster spent the happiest and most comfortable term he had had for over two years. He had learnt a great deal in this period, a great deal that had surprised him, a great deal that had disheartened him, and at the same time a great deal that had encouraged him. And in the end he had steered his ship through the uncharted sea into the smooth waters. Quite smooth, you ask? Well, well—!

#### SCHOOL GARDENS IN IRELAND.

By L. J. HUMPHREY,

Organiser in Rural Science for the Department of Agriculture and Technical Instruction, Ireland.

**I**F developments in Irish education have on occasion been delayed, there has at least been the advantage that the experience of other countries could be utilised in framing programmes. Endeavours were made to take advantage of such an opportunity when, some six years ago, a scheme of instruction in rural science (including school gardening) was brought into existence for Irish primary schools. On one hand it was sought to avoid

what has been described as the "cabbage" policy, by which too much attention was given to the methods of producing prize crops, and on the other care was taken to secure that the science taught was sufficiently correlated with practical outdoor work to render it of interest to the child. A syllabus was therefore drawn up which included some forty lessons on what may be called the principles of plant cultivation in each year of a two years' course. The practical work of a school garden was correlated with these lessons, an endeavour being made to introduce scientific method into the actual teaching of gardening. Thus the teachers were asked to attach more importance to systematic, neat, and carefully measured work in the garden than to the mere dates of sowing or planting. Their pupils were required to know the main facts of the plant's life-history, and to understand something of the processes which take place in the soil and in the air surrounding the plant. This necessitated a knowledge of heat, solution, and other physical questions, as well as of plant structure, and considerable ingenuity has been shown by the teachers in drawing up programmes to incorporate lessons on these subjects in a graduated course in rural science.

In the second year of the course there is a widened outlook; the work of the garden is still continued, but the science lessons deal more with conditions surrounding the school than with a growing plant's immediate environment. The methods of a regional survey are adapted to secure an understanding of the local conditions. The study of the weather leads to a consideration of the climate. The deciding factors in the choice of the commonly grown crops are shown to be related to climate and soil. The examination of a few typical soils naturally leads to inquiries as to how soils are formed, the rocks from which they originate, and the influence of streams and rivers. At the end of the course the pupil leaves the school with an intelligent interest in rural affairs, and he has been trained by methods of observation and experiment to investigate problems as they arise. Incidentally he has learned how to crop a small plot and to produce food plants and flowers, while by introducing to him the use of books he is shown how to add to his knowledge when he leaves the school.

It is not to be wondered at that it is difficult to get teachers to realise all the ideals contained in such a programme, but by utilising the resources of the teaching staff of the Royal College of Science, the Department of Agriculture has succeeded in training a very small band of instructors, whose influence is gradually permeating the country. For the teachers

in the primary schools summer courses of one month's duration under the instructors are arranged each year. Scholarships are provided, and during the month of August some sixty teachers are given a practical and theoretical training, including practical gardening, at the Royal College of Science in Dublin. During the first year's course practical laboratory and garden work occupies some six hours of each day, and in addition a number of excursions are made to study the vegetation of the Dublin district, which, from its situation in close proximity to mountains, sea, and rivers, provides an excellent centre for the study. Certificates are awarded as the result of an examination at the end of a second summer course, but successful teachers are provisionally recognised as qualified to teach the subject in their own schools, and to earn a special grant for this work after the first month's course.

After a year's experience of teaching in the primary schools the teacher has thus an opportunity of attending a further course in the following summer, when much of the time is devoted to excursions to study geological features and their relation to the distribution of the native plants and to local systems of cultivation. Types of plants less common than the garden plants are studied during this course, and the relation of fungi, ferns, and conifers to the more familiar plants is investigated. Finally the enemies of crops, such as insects and fungi, receive due attention in a course of practical laboratory work designed to reveal to the student avenues of knowledge leading to opportunities of study in the district of which his school is a centre.

Progress in establishing such school gardens is not very rapid, although the inspecting authority, the Department of Agriculture and Technical Instruction, is able to report a steadily increasing number of schools earning grants for teaching the subject, the number now being about 150. Several of the training colleges provide courses in the subject, and county committees of technical instruction provide classes for the instruction of local teachers. Grants for equipment of the school and garden are made by the Commissioners of National Education, who also make a small annual grant towards the cost of plants and seeds. The inspection is in the hands of the Technical Instruction Branch of the Department of Agriculture, while the schools are also visited by the inspectors of the Board of National Education, who are responsible for the teaching of all other subjects in the national schools.

In other directions the movement for a rural bias to the education given in primary schools

continually gains ground, and provides additional support for a monthly journal which is edited by Prof. Houston, whose work in Essex is so well remembered. This journal, which in many respects is an improvement on the nature-study bulletins of the American colleges, acts as a link between the schools, their teachers, and the teaching staff of the college, who frequently contribute to its pages.

Though late in the field and slow in gathering momentum, the school garden movement in Ireland shows possibilities lacking in more spectacular schemes, and for that reason it has attracted the attention of educationists, who hitherto have been inclined to regard the introduction of practical gardening into primary schools with disfavour. It cannot be claimed that an ideal programme has yet been found, but the work which is being done should ultimately provide valuable data for that ideal type of rural school for which Ireland, in common with other countries, is steadily seeking.

#### PERSONAL PARAGRAPHS.

**N**OT the least interesting of the appointments in the new Ministry is that of Dr. H. A. L. Fisher to the Presidency of the Board of Education. Dr. Fisher has been for four years vice-chancellor of the University of Sheffield. In that capacity he has done much to cement the good feeling between the city and the University and to raise the prestige of the latter in the minds of the general public. He will carry to the Board of Education an intimate knowledge of the needs of higher education in the provinces and something more than a sympathetic acquaintance with the whole problem of educational reform. He has been an active member of the Sheffield Education Committee, and he is still presumably a member of the committees appointed to inquire into the needs of modern language teaching and the higher examinations of the Civil Service Commission. For a year or thereabouts he was a member of the Teachers' Registration Council, where he came into contact with teachers of every grade, and as a member of the Joint Matriculation Board of the Northern Universities he has been for several years in close connection with a most important link between the secondary schools and the universities of the North. As a member of the Royal Commission on the Indian Civil Service, Dr. Fisher made two long visits to India, and brought a mind of great vigour and power to the consideration of administrative problems on the grand scale, and the fact that he was a member of the com-

mittee appointed to inquire into the Belgian atrocities was some evidence of the confidence placed in his judgment by the then Prime Minister.

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DR. FISHER'S interest in educational reform was shown by the conference he organised at the University of Sheffield last September. Although the conference was private, invitations were issued to all the members of the local authority and to representatives of every educational interest in the district. Papers on each aspect of the problem were read and discussed, and Dr. Fisher's masterly summaries of these various discussions will be remembered by all who attended that conference. Probably no man in Britain is quicker to grasp a new idea or more competent to see its relation to a great whole than the new President of the Board of Education. He believes in education, and he will go to the Board in no amateur, dilettante spirit, but with the firm intention of accomplishing a great educational reform conceived on liberal and statesmanlike lines. It is perhaps also worth saying that those who know him best believe he will impress the House of Commons itself. He is an admirable speaker, sincere, courteous, and quick-witted. A scholar of the first rank, a fellow of the British Academy, he will lend distinction even to this Government—a point of great promise for the future of national education.

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PROF. A. M. WORTHINGTON, whose death, following an operation for appendicitis, occurred on December 5th, will long be gratefully remembered by science teachers for his pioneer work in the introduction of the practical study of physics in schools. His "First Course of Physical Laboratory Practice," published thirty years ago, which embodied the work done at Clifton College under his direction, was the forerunner of a host of similar volumes now in existence. He was the first to show the educational value of the systematic, practical study of physics, and largely to his success at Clifton must be ascribed the present position which the subject occupies in the curriculum. After leaving Clifton, in 1885, Prof. Worthington became headmaster of H.M. Dockyard School, Portsmouth, and in 1887 was transferred to Keyham, Devonport, as headmaster and professor of physics at the Naval Engineering College then established there. He spent twenty years at Keyham, and his strong personality impressed itself upon hundreds of naval engineering students who came under its influence. In his work he was loyally supported by Mr. Crocker, the senior assistant-master, who was at Keyham

when Prof. Worthington was appointed headmaster, and by Dr. Larden, who joined the staff a few years later. Outside the college he was a delightful companion. Travelled, widely read in literature and many branches of science, he was strong in argument as well as genial and full of humour. His death deprives the world of a great teacher and many teachers of an inspiring friend.

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MISS E. R. PEARSON has been elected to be the first headmistress of St. Edith's School, Brackley. For the school the Midland Society of the Woodard Schools is securing the Manor House, Brackley, lately the property of Lord Ellesmere. Miss Pearson has been for twenty-two years a mistress at St. Leonard's School, St. Andrews. She is a past president of the Assistant-mistresses' Association.

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THE Governors of St. Bees School have appointed Mr. C. W. Kaye, headmaster of Bedford Modern School, to succeed Canon Sawyer, who is going to Shrewsbury as headmaster. Mr. Kaye was educated at Marlborough and at University College, Oxford, where he graduated with second-class honours in Lit. Hum. in 1888. He has held masterships at St. Dunstan's College, Catford, and at Uppingham School. He was for seven years headmaster of Loughborough Grammar School before going to Bedford in 1901.

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MR. A. J. SPILSBURY, for sixteen years senior classical master at the City of London School, has been appointed headmaster of Wakefield Grammar School, in succession to Mr. J. E. Barton, who has accepted the headmastership of Bristol Grammar School. Mr. Spilsbury held masterships at Christ's College, Brecon, and at Brighton College before going to the City of London School. He was appointed headmaster of Haberdashers' Aske's School at Hampstead, but held that office for only a short time, after which he returned to the City of London School.

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DR. H. FRANK HEATH, C.B., has been appointed permanent secretary of the new Department of Scientific and Industrial Research for Great Britain and Ireland under the Lord President of the Council, with the President of the Board of Education as vice-president. Dr. Heath, who is a fellow of University College, London, has been director of special inquiries and reports under the Board of Education since 1903. He has been principal assistant-secretary of the Universi-

ties Branch of the Board for the past six years, and education correspondent to the Government of India since 1904. He was one of the joint secretaries of the Royal Commission on University Education. At the Board he has filled a position, for some time of considerable difficulty, with great tact and discretion.

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MR. CLUTTON-BROCK, who is writing a series of articles for the *Educational Supplement of the Times* on religious education, was, when sitting for a severe examination, suddenly met with the question "What is the moral of *Macbeth*?" Mr. Clutton-Brock says that his attention was arrested by the question, but he remembered his object was to pass the examination rather than speak the truth, and he therefore replied: "It is wrong to commit murder."

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MR. G. L. BENNETT, headmaster of Sutton Valence School from 1883 to 1910, died on November 30th, at the age of seventy. Mr. Bennett, who was educated at Rugby and at St. John's College, Cambridge, went back to Rugby for a time as master. He then became headmaster of Plymouth College before going to Sutton Valence. His best-known books are school editions of Latin authors, which have been very popular.

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THE death is announced of Mr. Allen Croft, of Nottingham, a former president of the National Union of Teachers. Mr. Croft was a member of the executive of the Union for some twenty-five years. His year of office was 1902, when he expressed the opinions of elementary teachers upon the Act of that year. He then became chairman of the Education Committee of the Union, and as such became an authority on the working of the Education Acts and Codes. His sound common sense, his knowledge of education, and his powers of persuasion will be greatly missed in the councils of the Union.

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THE death took place early in December of the Rev. Harry Morris, who was from 1868 to 1910 a master at the Merchant Taylors' School. Mr. Morris was from 1887 curate at St. Mary-the-Less, Lambeth.

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DR. JOHN KERR, formerly Chief Inspector of Schools and Training Colleges in Scotland, died in Edinburgh on December 3rd, at the age of eighty-six. Dr. Kerr went from the parish school in his native village of Dalry to Glasgow University, then to Edinburgh University, and later to Cambridge, where, among

other honours, he won the Burney Prize. He remained at Cambridge for a short time coaching, and was offered and accepted a classical mastership in the Grammar School of Bury St. Edmunds, where Dr. Donaldson, of "New Cratylus" fame, was once headmaster. In 1860 he was appointed H.M. Inspector of Schools for the North of Scotland; in 1878 he went to the S.W. District as Chief Inspector, and ten years later became Senior Chief Inspector. He retired in 1896.

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DR. KERR's service was the longest of all who have been inspectors of schools in Scotland; for some fifteen years before his death he was the only one alive who had had a share in the almost countless alterations and improvements in the work of the Education Department from its infancy; he had examined almost all the secondary schools in Scotland; every county in Scotland had been more or less immediately under his charge as district or chief inspector; he had examined for degrees in Edinburgh and Glasgow Universities, and gave evidence before all the important education commissions. Dr. Kerr wrote a book of reminiscences which appeared about 1901; it is at once a history of education in Scotland, an inspectors' instruction book, and a collection of good stories. It breathes the ideals, the sympathy, and the humour of the man. Inspection is not a means of exercising control, but of affording assistance; not for restraint, but for encouragement, of local efforts. One of the first duties of the inspector is to put teacher and pupils at their ease.

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AN inspector asked the meaning of the word "pilgrim," and obtained the reply that a pilgrim was a man who went from place to place. "Well," he said, "you are so far right. I am here to-day, I go to A to-morrow and B the next day. Am I a pilgrim?" "Oh, no, sir," said the little girl, with unconscious innuendo; "a pilgrim is a good man."

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PROF. J. MAYOR, who died at Kingston, Surrey, on November 29th, was for some years headmaster of a preparatory school. His pupils gratefully remember the patience with which he taught them classics. He was at King's College, London, from 1870 to 1879, and later edited the *Classical Review*.

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AMONG the schoolmasters recently killed at the front are Capt. Tait-Knight, a master at Rossall and at University College School; Lieut. E. J. Barrow, science and mathematics

master at Penzance and at Luton; Lieut. E. F. Baxter, of Liverpool; and 2nd Lieut. N. C. Kempston, of Rossall Preparatory School.

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WRITING to us of the death, on October 22nd, of Miss Haes, English mistress at the Brondesbury and Kilburn High School, a correspondent says: "In Dulcie Ethel Haes we have lost—and lost, alas! prematurely—a teacher of a type all too rare and always needed. Her originality of view, her many interests in life, her dramatic power, and her wonderful vitality combined to produce a striking personality. Her experience was wide and varied. A Notting Hill High School girl of Miss Jones's days, she was trained as a kindergarten teacher at the Froebel Institute; but she found her true place later as a teacher of English. Her pupils at the Brondesbury High School will not readily forget her love and reverence for the best in English literature. She seemed to have read everything: possibly because she acted throughout her life on a suggestion made to her when a girl at school: 'Give at least ten minutes every night before you go to bed to reading something really good.' To this knowledge add a sound judgment and critical power, a dramatic instinct which was able to fire the imagination and to awaken a corresponding instinct in her pupils, and an ear which demanded a fastidious purity of enunciation, and you have an English teacher of no mean order. Her interests in life—the theatre, art, travel, golf, and intercourse with a wide circle of friends—all helped to broaden her outlook and enrich her lessons. Her last year at Brondesbury was very busy. The Shakespeare Tercentenary, her dramatic class, literary and patriotic work, in addition to her teaching, had filled every moment; but she began the holidays in apparently the best of health, and her eager brain was full of plans for the future and the days of peace. But unexpectedly came rest and sleep."

ONLOOKER.

#### UNIVERSITY APPOINTMENTS IN MODERN LANGUAGES.

CLOSE on three and a half years ago the Modern Language Association appointed a committee "to investigate the facts and report on the question of university appointments in modern languages," with the further instruction "to consider the question from the point of view of the relation between schools and universities." This was the outcome of an agitation demanding "British posts for the British," of which there has been frequent evidence in *Modern Language Teaching*. It had a real justification; in

modern language circles instances were freely quoted in which (so it was alleged) foreigners had been appointed to university posts in French and German who were manifestly inferior in qualifications to other candidates whose chances were reduced to nil because the electing body was convinced that only a foreigner was fitted for such a post. As a result, the outlook for our promising students was by no means encouraging, and the academic study of foreign languages consequently suffered.

The well-selected committee took its task very seriously. A number of questions were drawn up and widely circulated, and nearly three hundred answers were received, of which seventy-seven were from the universities. Twenty-three witnesses attended to give evidence before the committee. In the report now issued by the Modern Language Association the answers are carefully analysed; they serve to show that on many points there is unanimity of opinion among those best qualified to judge. The committee, after sifting and weighing the evidence very carefully, arrived at the conclusions printed below. They appear eminently reasonable, and should go far to influence public opinion in the right direction. They should prove of special and immediate value to the Government Committee on Modern Languages.

I. The committee is of opinion that, in making university appointments in modern languages, all prejudices—where such still exist—against candidates of British birth are groundless, and to be deprecated. It is clearly the business of the university to obtain the most suitable occupant for the position which has to be filled; and for this reason it is felt strongly that a fair field is essential. Any restrictions tending to limit the field of selection by favouring foreign candidates would be prejudicial to the efficiency of university work in modern languages, as foreign scholars of high academic rank and of equal attainments with professors in their own universities, whose field of activity is their own language and literature, are only in exceptional cases to be tempted to expatriate themselves.

II. The committee holds that the ideal would be a professoriate consisting as a rule of British-born subjects, and, while recognising the difficulties under which British candidates have laboured in the past, believes that the recommendations made in this report, especially in paragraphs V. and VII., would make it possible more and more to appoint British-born subjects as the responsible heads of modern language departments at British universities. It must be remembered that such persons have, as members of the senate of the university, to assist in the government of the university, that they are responsible for the organisation of the department, the arrangement of courses, lectures, and examinations, and that they

have to advise students with regard to their studies and future careers.

III. Where appointments of foreigners are made to permanent posts, the committee, basing its opinion on the evidence submitted, thinks that certain conditions should be kept in view. These are:—(1) That the foreigner should possess the rank as a scholar which would entitle him to occupy a similar position in a university of his own country; (2) that he should be familiar and in sympathy with us in respect, not merely of education, but our national life generally; (3) that his activity as a teacher and a scholar should be directed to further the cause of the branch of learning he represents in this country; and (4) that naturalisation should be a *sine qua non*. It may be pointed out that in France all occupants of university chairs must be French by birth or naturalisation, and all must be in possession of the French doctorate in letters or science.

IV. The committee does not feel, in view of the evidence submitted to it, that it would serve any good purpose to arrange in order of importance the qualifications of a candidate for a university chair. In most appointments personality plays an important part, and, while scholarship and research work are of the first importance, teaching and lecturing ability must not be undervalued. A thorough knowledge of the language in question goes without saying, while an inadequate knowledge of English would be a serious drawback, even in the case of a temporary post. In any case, the evaluation of such qualifications should be left to a committee of experts dealing with individual appointments.

V. The committee confidently hopes that the most suitable candidates whom it is the object of the universities to discover will be found with increasing frequency among British scholars. It believes that the chief problem is to bring this state of things about; and that the efficient training of British scholars at British universities, with the view of occupying the highest university positions, is of the first importance. While assuming the more obvious desiderata, such as academic distinction, scholarly specialisation, lengthy residence abroad, etc., the committee would like to submit the following points for consideration:—(1) The British candidate has, it is believed, too often relied on the possession of a high degree, combined with study at a foreign university, and perhaps also a foreign degree as constituting in themselves a passport to a university chair. It cannot be sufficiently emphasised that, in view of the requirements of most British universities at the present day, the candidate will greatly limit his chances of success unless such distinctions be supplemented by proved ability to carry forward some branch of his subject by means of criticism or research in the form of published work, as well as by clear gifts as a lecturer and teacher. (2) The position of assistants in the modern language departments of our universities is, in most cases, unsatisfactory. The work required is often excessive, and effectively prevents independent scholarly activity, while the salary is so low as to make it necessary for a man in such a position to

eke out his income by examining, editing school texts, journalism, and the like, instead of winning a reputation for himself by scholarly work, which, in itself, is financially unprofitable. The committee is of opinion that an improvement in the salary of assistants is urgently called for, and that it would lead to a corresponding improvement in the status of both the teachers and the subject.

VI. The committee approaches with some diffidence the question of the internal organisation of the modern language department of a university. It recognises that the particular system of a British professor assisted by a foreign *lektor* or "assistant," which found most favour in the answers to the *questionnaire*, might not be suitable in all cases. At the same time, the committee favours this plan: that is to say, the appointment of a young foreigner, whose own personal interests may be English, and not his own language and literature, and whose future lies in his own country, as being likely to meet most requirements. The committee would, however, deprecate the view that a foreign teacher of this type can, as assistant, take the place of a trained specialist in the language and literature to be taught; his functions should rather be supplementary. One good feature in the plan is that its existence in most Continental countries gives us the advantage of reciprocity—a matter of importance for the training of our own future professors of modern languages. Such reciprocity does not exist where higher positions are concerned. It may be noted that of British-born teachers of modern languages at the universities of Great Britain and Ireland, a considerable proportion have been, for a time, *lektors* or assistants in English at German or French universities. The committee is strongly of opinion that the appointment of a foreign teacher of this kind should be made only for a limited period.

VII. The high standard of modern language teaching on the Continent is due in no small measure to the fact that foreign Governments give, in certain cases, financial help to intending professors to enable them to pursue their studies abroad. At present British candidates for modern language professorships, if they wish, after taking their degree, to study at foreign universities, are obliged to do so at their own expense. To enable British candidates to compete on more equal terms with foreigners, the committee is strongly of opinion that the Government should be asked to make a grant of a certain annual sum to provide scholarships. Appointments, or at least nominations, to such scholarships should be in the hands of the universities.

VIII. The committee thinks that, after the war, the question of the exchange of university professors, at least between the Allied nations, should not be lost sight of. It is also in favour of the principle of allowing terms kept in foreign universities to count towards the number necessary for obtaining a degree in the university to which the student was originally attached.

IX. The committee further thinks that an extension of the *privat-dozent* system, which already obtains in at least one British university, might also prove helpful.

## THE MOST NOTABLE SCHOOL BOOKS OF 1916.

THE compilation of the following short lists of books published during 1916 has been entrusted to experienced teachers familiar with the needs of schools.

The compilers have had a free hand, and attention has not been confined to books reviewed in these columns.

When the character of the volumes is not indicated sufficiently by the titles, a few explanatory notes have been added.

### **Modern Languages.**

"Further Steps in French." By Walter Rippmann-(Dent.) 2s.

"The Oxford Treasury of French Literature." Vol. i., "Medieval, Renaissance, and Seventeenth Century." By A. G. Latham. (Oxford University Press.) 3s. 6d.

"Manuel de Lecture Expliquée (XIX<sup>e</sup> Siècle)." By S. A. Richards. (Cambridge University Press.) 2s. 6d.

"A French Note-book." Arranged by C. E. Hodges-(Dent.) 1s. 9d.

"French Composition for Students and Upper Forms." By G. W. F. R. Goodridge. (Oxford University Press.) 2s. 6d.

"Colloquial French." I., "French Fluency Exercises." By H. E. Palmer and C. Motte. (Heffer.) 1s. net.

"Buch deutscher Dichtung von Luther bis Liliencron." By H. G. Fiedler. (Oxford University Press.) 3s. net.

### **Classics.**

"Aristophanes." I., "Wasps." II., "Clouds." Greek text, with metrical translation by B. B. Rogers. (Bell.) 10s. 6d. net each.

"Homer and History." By Walter Leaf. With maps. (Macmillan.) 12s. net.

"Rēgēs Cōnsulēsque Rōmānī." By F. R. Dale. ("Lingua Latina" series.) (Clarendon Press.) 2s.

"Initium: a First Latin Course on the Direct Method." By R. B. Appleton and W. H. S. Jones. (Cambridge University Press.) 1s. 6d.

"Pocket Lexicon to the Greek Testament." By A. Souter. (Clarendon Press.) 3s. net, or 5s. 6d. net on India paper.

"A Companion to Greek Studies." Edited by Leonard Whibley. Third edition, revised and enlarged. (Cambridge University Press.) 21s. net.

### **English Language: Grammar and Composition.**

"A New English Grammar." By E. A. Sonnen-schein, with exercises by Edith Archibald. (Clarendon Press.) 3s. 6d.; also in three parts, 1s., 1s. 6d., and 2s.

Based on the recommendations of the Joint Com-

mittee on Grammatical Terminology; an excellent work, on scientific lines.

"The Sounds of Spoken English, with Specimen Passages." By Walter Rippmann. (Dent.) 3s. net.

A useful revision, with additions, of the author's two volumes.

"English Verse Composition." By A. E. Roberts and A. Pratt. (Edward Arnold.) 2s. 6d.

Supplies valuable practice in verse; helpful, also, indirectly for prose composition.

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## A PROGRAMME OF EDUCATION REFORM.

THE Education Reform Council was founded in April, 1916, at a conference called by the Teachers' Guild. The work of the committees is incomplete, but a view of its urgency and importance the following programme is published, with the permission of the council, in advance of the full report, which it is hoped to complete early this year.

It is to be understood that reference is made to both sexes in all cases except where otherwise stated.

**1. Aim.**—The reforms proposed have as their aim to widen educational opportunity; to train all for work and leisure; to utilise more effectively national resources, human and material; to fit the growing generation for the service of home, society, and the State; to admit all to the quest for goodness, truth, and beauty; to make better citizens.

**1. EDUCATION AUTHORITIES.**—1. The Ministry of Education should hold a higher place in the hierarchy of the offices of the State, and the salary of the Minister should be equivalent to that of other principal Secretaries of State.

2. Progressive organisation is hindered by certain statutory distinctions between higher and elementary education. Local authorities for higher education should be obliged to supply or aid the supply of higher education, and the limit of 2d. to the higher education rate in the county areas should be removed.

3. For the purpose of co-ordinating the activities of local education authorities with those of the universities and institutions for higher education, the country should be divided into educational provinces, the areas of which should be larger than those of the existing local authorities. (See II., 11.)

4. While the recently created medical service, central and local, has already rendered great aid to education, it is evident that what has been, is but a tithe of what ought to be, effected. The main result to be expected from a great extension of the school medical service is an advance in public health, in which direction a wise policy may produce a manifold financial return in national efficiency, and a gain in morality, health, and happiness (at least in the prevention of misery and crime) not expressible in figures.

5. There should be increased provision for the care of children under school age, and steps should be taken to secure parental responsibility.

6. Worthy private effort in education should be encouraged. With proper safeguards as to efficiency and accessibility, schools under private management should receive State aid. The Board of Education should make adequate provision for the inspection of all schools.

7. The classes carried on under joint committees of the universities and the Workers' Educational Association are doing work which is of national importance and deserves increased State support. If the existing grants to the three-year and one-year classes were augmented, the admirable work now done could be successfully extended so as to reach the large number of working men and women for whom present funds cannot provide.

**II. THE CONTINUITY OF EDUCATION.**—1. The principle of continuity must be carried out effectively in all branches of education, lower educational institutions being linked to higher by well-planned promotion of pupils and by attention to desirable sequence of curricula. Educational institutions should be brought into relation with professions, commerce, industry, agriculture, home-making.

2. The years from age fourteen to seventeen are educationally fateful. Organised education must continue for every boy and girl until at least the age of seventeen.

3. In elementary<sup>1</sup> schools children should receive full-time education until at least the end of the educational half-year in which the fourteenth birthday occurs. Thereafter part-time education should continue until the age of at least seventeen, in the daytime, for an average of three half-days per week or an equivalent period per annum.

4. The elementary-school system should be entirely recast so as to provide—(a) primary departments, or schools, for ages from about five and a half to eleven and a half; (b) middle<sup>2</sup> departments, or schools, for ages eleven and a half to fourteen and a half, with optional attendance until fifteen and a half; (c) continuation<sup>2</sup> departments, or schools. The middle departments may be organised with either the primary or the continuation departments, or the three departments may be organised as a single institution.

5. Varying types of continuation schools should be encouraged; but these will probably fall into two groups: Group A, for pupils whose occupation may provide a study of real cultural value—e.g. technical work in commerce, industries, agriculture, housecraft. Group B, for pupils whose occupation is temporary or fails to provide a study of real cultural value—e.g. van-boys, labour of insignificant skill. In Group A a school for an industry, or allied group of industries, should be recognised as likely to give a good training in citizenship, and the work should have a vocational bias. Plans for development should be based on experience gained in England and elsewhere, and attention should be paid to the provision which has been made by public-spirited employers and to the work already done in women's institutes and in trade schools, especially in London. In Group B schools education cannot satisfactorily be centred round the present occupation. In no school of either group should the work be restricted to vocational subjects, as in both groups the aim is (a) to fit for citizenship, (b) to develop personality and encourage individual bents or capacities, (c) to meet physical needs. The continuation school must be really a school, with a corporate life of its own.

6. Reduction in the size of classes in elementary schools is an urgent need.

7. The transfer from primary to secondary schools, or from preparatory departments or schools to secondary schools, should take place usually between the ages of eleven and twelve. The 25 per cent. free-place

<sup>1</sup> The use of the term "elementary" throughout the programme does not imply approval of the term or of the statutory limits associated therewith.

<sup>2</sup> The council is not committed to the view that the teaching in these departments would be "elementary" in character.

system is illogical in principle and unsatisfactory in practice. Junior scholarships and free places should be provided in such numbers as will admit to secondary schools those pupils from elementary or preparatory schools who can profitably undertake a full secondary course. Where a system of higher elementary or central schools is established, a further selection of the elementary-school children at age eleven to twelve should be made for promotion to such central schools for a four-year course, assistance being given by the education authorities.

8. The number of efficient secondary schools of varying types should be increased. Schools provided by the local education authority should have separate governing bodies with real administrative responsibility. The Consultative Committee has advised the strengthening of the higher work of secondary schools, and the Reform Council considers that schools taking the lower grant should receive grants for this purpose. Pupils at any school recognised as efficient by the Board of Education should be eligible for State scholarships for prolonging secondary education, or tenable at the universities. Many capable students will continue to be debarred from the universities, with consequent loss of national efficiency, if these scholarships are limited to "aided" schools.

9. In secondary schools, including endowed and public schools, pupils should remain as a rule until the end of the term in which the seventeenth birthday occurs. Financial provision should be made to enable suitable pupils to continue at school until they enter the university.

10. The Reform Council expresses complete agreement with the view advanced by the Consultative Committee that large additional funds should be provided by the State for scholarships for higher education. The amount suggested—£329,500 per annum—is not too large.

11. The selection of students for scholarships to the universities and institutions for higher education should be based upon an expert review of the relevant qualifications rather than upon a central competitive examination. Such relevant qualifications are the school record, examination record, probable career, and general personal fitness. The amount of assistance given should be such as to enable the scholar to live in a manner befitting a university student during the normal course required for graduation, and for the necessary post-graduate preparation for professional practice. For most professions, and for research in pure science, at least one year of post-graduate preparation is necessary. In determining the number and incidence of the awards, the main consideration should be the national need to strengthen the learned professions (including teaching), and to further industry, commerce, and agriculture. The Board of Education should allocate grants for higher scholarship purposes to the provincial boards (see I., 3); the provincial boards should make the awards, their action being co-ordinated by the Board of Education or by a special national board.

12. The attention of the managers of large commercial and manufacturing undertakings should be directed to the appointments boards, which in most universities

are now giving trustworthy help in the selection of graduates suitable for different types of responsible work. If the guiding minds of the universities keep in touch with leaders in the professions and industries, the claims of liberal education and of utilitarian efficiency may be harmonised.

13. Attention is directed to the national and imperial need for an increased number of women doctors. The higher scholarship scheme should be specially enlarged to provide full training for suitable women for the medical profession.

14. Social service is requiring a large number of trained and experienced workers. The action of those universities and colleges which have established courses and diplomas for social study is to be welcomed, and should supply women as well as men well prepared for some of the numerous public posts created during the last few years. Work of this kind should be adequately remunerated.

15. Secretarial assistance should be provided for all but very small schools; the absence of such assistance is uneconomical, causing serious waste of the teachers' influence and personality, especially on the part of the head-teacher.

**III. THE SUPPLY AND TRAINING OF TEACHERS.—I.** Educational progress depends upon the possibility of securing trained men and women with the necessary spirit and ability. So far as men are concerned, the situation is bad and is certain to become worse. Before the war the requisite number of men was not obtainable, and fewer were coming forward than were needed to fill vacancies; the quality was frequently disappointing. Now war has depleted the too thin ranks. A complete revision and substantial improvement of the scales of salaries should be made at an early date, in order to attract to the schools suitable men and women. Pensions should be provided on the Civil Service scale. Half-measures, such as verbal persuasion and doles towards training of those who do not feel any bent towards the work, are futile. To recruit men and women of high purpose and needed ability, the teaching profession should draw from the universities side by side with other professions. Teaching should be reckoned among the professions to be strengthened by the higher scholarships scheme.

2. In order to increase the efficiency of public schools and other endowed schools for boys, especially on the intellectual side, they should be staffed by men whose professional equipment includes training in the principles and practice of education; but this should not be achieved by lowering the standard of personal and academic qualifications.

3. More candidates for teaching in elementary schools should take a university degree before entering a training college, and the general standard of training should be raised.

4. On the completion of the usual training and probationary courses, modern language teachers should be assisted to live for a period of twelve months abroad, in a *milieu* not entirely academic, in order the better to understand the character and ideals of the country whose language they propose to teach.

5. It is desirable that teachers of commerce should

have actual commercial experience as well as academic and professional training.

6. Provision should be made for special courses, or for special colleges, for training specialist teachers of handicraft. If such training is being given at an institution with an extensive range of workshops (e.g. at a polytechnic) it will be advantageous to allow the persons being trained to have from time to time the free run of the workshops.

7. To supply the varying needs of different types of schools it will be necessary to utilise the services of artisan instructors in addition to those contemplated above. Such instructors should receive a special course of pedagogical training.

8. The scheme of physical training given to teachers should incorporate the hygiene of physical exercises.

9. Opportunity should be given for women students whose purpose being senior school teachers to take a special course of mothercraft and associated hygiene subjects. This might be taken within a post-graduate course of training, or as a post-training course by non-graduates.

**IV. TRAINING OF CHARACTER.**—1. The influence of home is the earliest, and probably the most permanent, element in the formation of character; the value of good parental influence cannot be overstated. The right kind of parental authority is jeopardised by certain tendencies—e.g. foolish indulgence, showing itself in a sentimental resentment at even proper discipline; conditions of modern industry, by which the father is away from home while the children are about; modern housing conditions, making real home life impossible for many working-class families; the increase of State intervention, leading to a weakening of parental sense of responsibility. In some measure these dangers may be reduced by (a) more provision for the instruction of young parents in the moral problems connected with the upbringing of children; (b) closer co-operation between school teachers and parents.

2. Large classes are a serious hindrance to character training.

**V. CURRICULA.**—1. It is understood that the necessary arrangements will be made for religious and moral instruction.

2. In all schools there should be great attention to English, spoken and written.

3. The curriculum for children under eleven (or twelve) in preparatory or primary departments or schools (including those preparatory to the endowed public schools) should include (a) physical training, games, dances, and other eurhythymical exercises; (b) handwork, based mainly on such primitive arts as pottery, weaving, basketry, needlecraft; (c) drawing, with crayon, brush, and pencil; (d) language, including intelligent reading and learning by heart of suitable verse and prose, training of the voice in speech, writing, oral and written composition; (e) simple mathematics, i.e. the elementary study of number and space; (f) history and geography; (g) the beginnings of science, by study of environment and of plants and animals; (h) vocal music and musical appreciation. It is recognised that manners, care of person, cleanliness, and tidiness should be supervised and directly taught in all schools.

4. The curricula of the middle departments of elementary schools should be framed as the earlier part of an educational course to be completed at seventeen through part-time departments. As a natural sequence the continuation part-time curricula will include varied developments of the work begun in the middle department, especially those parts more suited to increase maturity of mind and physique. In Group A schools (see II., 5, above) part of the course will have direct reference to the daily employment.

5. The minimum curriculum for a pupil from eleven to sixteen in a secondary school should include (a) English; (b) history; (c) geography; (d) a foreign language; (e) mathematics; (f) science; (g) vocal music and musical appreciation; (h) drawing; (i) manual work; (j) physical training.

#### VI. EXAMINATIONS FOR JUNIOR SCHOLARSHIPS.—

1. The following affords a satisfactory scheme for the examination for the award of scholarships or free places to be held at a secondary school, the children being approximately eleven years old and coming mainly from the elementary schools. A written examination, restricted to arithmetic and English composition, should weed out the weaker candidates and give evidence of the capacity of the more promising. This should be followed by a brief oral examination of the children who stand the written test satisfactorily.

2. The school record or head-teacher's report should be taken into account in selecting scholars. Cases of marked discrepancy between the teacher's report and the results of the written examination should receive special attention at the oral examination and by review of relevant circumstances. The head-teacher's report should refer to unusual aptitude in drawing, handwork, or subjects outside the ordinary curriculum, in the cases where such aptitude is truly exceptional.

3. At the oral examination the candidates should be asked first to read aloud a short passage on which questions may be put to test general knowledge. Further questions should address themselves in part to the special bent indicated in the school report.

**VII. RESEARCH IN EDUCATION.**—1. Education is intended to train developing minds, a process the efficiency of which requires a knowledge (a) of the minds to be trained; (b) of the laws of mental development; (c) of the most effective methods of mental training for varying individuals or types. Such knowledge, to be trustworthy, can be obtained only by special research. England at present lags behind other great nations in respect of giving official support to individual research and in organising large-scale research in education. Valuable research has been carried out by individuals, but the benefit which should result is largely lost through lack of organisation and insufficient publication.

2. There should be established a central institute for educational research, which should work in close connection with the Board of Education and the teaching profession.

3. The formation of local research institutes and educational libraries by the larger local authorities should be encouraged. Such local institutes could usefully begin work on a small scale.

4. In addition to the demonstration schools already

required by the regulations, selected training colleges should have experimental schools. The work should not necessarily be limited to elementary education, and should be carried out under the guidance of the college staff.

**VIII. HEALTH AND MEDICAL SERVICE.—I.** The persons whose influence on the health of children is greatest are the parents, the children themselves, the medical adviser (school officer or private practitioner), the teacher, and, later, the employer. Efforts should therefore be made to instruct parents, teachers, and employers in their responsibilities in relation to the health of the young who are under their control. The school medical officer should have opportunities of observing the actual hygiene of schools, beyond that which is afforded by routine health examination of school children.

2. All schools (including public and private secondary schools) should be medically inspected by a public authority. A report or certificate should be furnished to the governing body or proprietors of the school, dealing with the suitability of the environment, accommodation, air space, desks, etc., cleanliness, lighting, ventilation, and sanitary provision. The intervals between school inspections should not exceed five years.

3. All children attending school should be medically inspected annually. The parents should have the option of producing the required information, at their own expense, from their own medical attendant, in a form acceptable to the school medical officer. The school medical officer should visit at least once each term, and should conduct routine examinations annually. He should examine special cases, when requested by the head-teacher, who may ask for authoritative instruction for remedial action to be sent to the parents. The head of the school should have opportunity for consultation with the school medical officer with reference to individual cases. The medical officer can often give valuable advice as to the choice of suitable careers for pupils after leaving school. The practice of parents consulting medical advisers on this point should be encouraged.

4. More air-space and better ventilation should be provided in the classrooms of elementary schools.

5. The most urgent need for the public health is abundant playing space for the children. Sufficient exercise for the young means better health and efficiency in adult life. In all towns ample play centres should be provided for the use of children in and out of school hours, equipped with simple apparatus and in charge of supervisors who understand children, and can fully enter into and guide their spontaneous activities.

6. In order to be effective, physical exercises should be given daily for at least twenty minutes. Proper gymnastic or games costume and shoes should be provided. Physical education should be many-sided, to serve æsthetic as well as developmental or remedial ends. Games should include stretching exercises, particularly in girls' schools: hence swimming, netball, and lacrosse should be encouraged.

7. The teachers of physical exercises should attend the medical inspection of pupils (except for parents' option as above).

8. Research is needed into the exact effect of different forms of exercises on children of different sexes, ages, and physique; particularly as to their effect on the personal health of girls and possible influence on parenthood.

9. Every town should have access to a psychological clinic for its children.

10. A weekly bath under school auspices should be secured for all children attending elementary schools.

11. Of all expenditure on public health, school dentistry is probably the most economically efficient. An annual dental inspection of all children of school age is highly desirable.

12. Some factories employing young people allow thirty minutes' off-time every day, during which the young employees are suitably exercised under trained teachers. This action is worthy of wide imitation.

## EDUCATIONAL PROGRESS IN NEW ZEALAND.<sup>1</sup>

OWING to the extraordinary conditions and problems created by the war, I have felt it necessary to place before Parliament a memorandum in addition to the Education Department's report setting forth certain views relating to educational matters.

I am convinced that the education and training of the present and immediately following generations constitute the greatest reconstructive agencies at our disposal for the repair and reorganisation of national life after the present destructive upheaval. The principles of educational progress on which I hope to base the successive practicable reforms in educational procedure which may contribute to the reconstruction referred to are therefore presented in very general outline. The goal cannot be reached at a bound, but I am certain that we need now to make a kind of educational stocktaking and to give some perspective to educational effort, so that the people of the Dominion, on whose cordial support so much depends, will be able to follow and encourage each movement towards a thoroughly reconstructive national policy. It is also my desire to enlist the closest attention and earnest co-operation of the members of the Legislature in the future possibilities of education, the progress of which is so closely interwoven with that of the Dominion.

**EDUCATION AND THE WAR.**—The present war has severely tested our various national resources, revealing our strength and our weakness, but after-war problems will test our ability to profit by the lessons of the war. Education, being one of the most important inspiring principles, and at the same time the direct reflection of national life, finds itself in a special measure assessed by the great national test. Whatever defects have been revealed, we find our type of manhood and womanhood vindicated and our position as a people justified by the extraordinary response of a free people to the call for national service. Our educational system in New Zealand may justly claim a great share in the honour of sending forth thousands

<sup>1</sup> From a Memorandum by the New Zealand Minister of Education, Mr. J. A. Hanan, dealing with some phases of educational progress and reviewing existing conditions in the light of national requirements.

of our former pupils as volunteers in the great cause. Moreover, one of our training-college principals, four inspectors, and more than four hundred teachers have enlisted with the boys trained under them directly or indirectly in our schools.

Our educational system must lead the way in a keener sense of national co-ordination and efficiency, in a readiness to abandon useless forms and practices, in a demand for a higher standard of work and of life; in short, in an application of the simple axioms that "A straight line is the shortest distance between two points," and "The whole is greater than its part."

**REALITIES.**—All educational effort must in future be devoted to dealing with realities as contrasted with abstractions, formalisms, and pedantic studies. Modern kindergarten and Montessori methods at the one end, and the reformed methods of teaching such subjects as practical applied science and economics at the other, condemn a great deal of what lies between as mere beating of air. All education must concern itself with actualities and activities of life, and (in proportion to its advanced nature) must increasingly justify itself by what it does for the community.

This is not a utilitarian, materialistic standard. When a subject ceases to be studied for use it ceases to be of value for culture. Language is for the development and communication of thought and knowledge; mathematics for calculation; science for power to use the forces of Nature as well as to understand them; yet thousands of secondary-school pupils are spending a fifth of their time at Latin, in which not 1 per cent. of them can ever read, or think, or express themselves. They spend another fifth on mathematics, by which not 5 per cent. of them will ever calculate or reckon anything. They spend about a tenth of their time in a study of science, which in the form adopted in many cases does not widen their personal interest in Nature, nor enrich their lives, nor render them of any service to the world of industry about them. This does not deny that a small percentage of our secondary-school and university students do carry the study to as fruitful an issue as the present somewhat academic instruction permits them. The fact remains that the great majority of the students receiving the most expensive education we can provide spend under these three headings alone, as above indicated, about half of their time in what is for them mere futile pedantry and study of abstractions.

**MENTAL DISCIPLINE AND CULTURE.**—The claim for such formal, abstract, unapplied study—that it provides good mental discipline and culture transferable to other activities—is now fighting in the last ditch all the world over. Such production of chaff for a grain of wheat has as much justification as would the pounding of the earth with one's fist for several hours a day to develop muscle when that purpose, and a much greater, could be secured by getting a blacksmith's hammer and doing something. Surely if the proper methods of teaching are used and powers of thought developed, an even greater mental discipline and culture can be secured by studying real things in a practical manner. There is no real antithesis between culture and vocational study. That false distinction is merely a relic of old class barriers and of

an age when the best educated people were not expected to be or to do anything outside a very limited sphere.

**THE OLD ORDER CHANGETH.**—It can be safely said that primary education with all its faults is more progressive, more in harmony with the best educational thought and with the nature and powers of children, better organised, better controlled by inspection, more valued, and more heartily supported by public opinion than is higher education. The reason is that it is the type of education provided for the whole community, so that its universal needs and benefits constitute a claim for general concern and general study resulting in a fairly close realisation of its possibilities.

The extension of free education from the primary school to the secondary school now places the same demands on the latter. It must meet the needs of the general community. Once upon a time secondary schools were for a privileged class irrespective of ability, and gave what was regarded as a provision for certain select professions. This has changed. We now provide that any pupil showing ability can enter a secondary school. Of more than ten thousand secondary-school pupils, about 85 per cent. are free-place pupils, and the State now pays nearly the whole cost of secondary education; even the so-called endowments consist almost entirely of grants of public lands. Not a tenth of these free pupils, and only a small proportion even of those who matriculate, intend to enter the university. Yet the old traditional studies and methods referred to under the heading of "realities" are imposed on all secondary schools because once upon a time they were merely university portals. We can surely keep that portal open for the few who need it without forcing all secondary-school pupils to traverse the same path. General secondary education and pre-university education cannot now be regarded as parallel.

**INCREASING DEMANDS.**—Secondary education must be kept free to all, and perhaps made compulsory for most, simply because even our best primary education relative to the multiplying requirements of our modern civic life, our national responsibilities, and even to the needs of our skilled industries, leaves a boy or girl as comparatively under-educated as did the dame's school in relation to the needs of a generation or two ago.

The former limitation of general education to the primary-school period, with the growing demands referred to, are largely the cause of the overcrowding in our primary syllabus to which public attention is so frequently directed. The growing consciousness of the complexity of life and a desire to cover all its phases kept up the cry that still another something was being left out, and the only general form of education—the primary-school system—was considered to be, like the tramcar, never too full. Thus an apparent width of education was secured at the sacrifice of depth and thoroughness. It is intended to do all that is possible to secure simplification of the curriculum and concentration on essentials through the agency of a more discriminating and practically useful and helpful style of inspection.

Admitting that the old formal study was defective,

there is no doubt that the pendulum has swung too far in the opposite direction, and that teaching often lacks the definiteness and exactitude that a truer recognition of principles would demand.

**SOLUTIONS.**—The fact that the present traditional secondary school cannot in any adequate sense meet the needs of the majority of our free-place pupils does not prove that it is unnecessary to provide free secondary education. Neither does the inability of the secondary-school course to interest and retain for any length of time pupils who show that the privilege should be restricted, any more than the unsuitability of secondary-school studies and methods to the equipment of ex-primary-school pupils proves that the primary schools should be made to conform to the requirements of the high schools.

The whole situation indicates that our secondary school system should be adjusted to the new conditions, so that, while encouraging and providing for the small minority of university aspirants, the very large majority should not be unfairly sacrificed on the altar of university preparation. This means that primary and secondary education must be considered as a whole, since for an ever-increasing number of pupils it should form a continuous course, which will provide for all as adequately as primary education does now up to the old limit.

The secondary-school question thus becomes the pivot of the whole education question. Its proper solution would simplify the primary curriculum, leaving time for a more natural education on kindergarten principles up to the age of seven or eight years, a more thorough attention to the broad essentials of general primary education, and the dovetailing of much of the present higher primary and lower secondary stages.

The problem of general secondary education and the problem of university education must be kept quite distinct. It is the former that is the pressing problem of this generation, and it must be dealt with in and for itself. When we have laid the foundations of a general secondary-education system we shall realise both the reforms which our elementary schools require and the true value of a university education. But until such a system has been created all educational endeavour on other lines would be more or less futile.

**TYPES OF SECONDARY EDUCATION.**—There are four types of secondary education which seem to be necessary to meet the new requirements:—(1) The university course leading to the skilled professions; (2) the general secondary or general vocational course on modern lines; (3) the continuation or special vocational course; (4) the country secondary course.

The basis of selection of pupils for these courses should not necessarily be one of mere intellectual ability. Of course, only the really capable pupils should be allowed to take up the first course, and failure to realise expectations should mean a transfer to one of the other groups. Yet equally bright pupils should find full scope in any of the courses, and pupils in one course would not necessarily be of inferior calibre to those in any other.

Further, a considerable portion of the course in all groups should be of much the same nature, because

all the pupils are to be future citizens and have certain common human possibilities and needs. English of a thoroughly literary type, history and civics of a character calculated to give a sound basis for patriotism and desire to serve one's country, practical geography, some form of applied science, and some form of manual work for all boys, with domestic education for all girls, must be adequately taught in all secondary schools. The difference would be largely in the material on which the instruction would be based, and the completeness to which the requirements of the course would permit the study to be carried.

This initial general training cannot be dispensed with in a democracy where equal opportunities are claimed for all. There is no justification for giving the good start, the broad vision, to a few, and condemning too many to a narrow, unenlightened existence. Not all will fully profit by this opportunity; but all have a right to it; and the opportunity should be held open for a reasonable length of time, even though there are those who seem slow in taking advantage of it. The thing to do is not to take away the opportunity, but to open the eyes of those who are missing what they might have.

(1) *University Preparation Course.*—Subject to such reforms as the university could be induced to make possible, course (1) would be the same as the present matriculation course, with a condition that such essential subjects as English, writing, spelling, oral and written expression must be kept up and improved to a far greater extent than at present. I have found reason to complain of the sad neglect of these common though essential subjects in high schools. A more thorough type of secondary-school inspection will need to be instituted.

(2) *The General Secondary Course.*—Latin would be left out. The foreign language taught should be conversational French. There should be a thorough English of a direct type based on wide reading, also a course of mathematics, but only of a directly applied character—e.g. in connection with the economic and statistical side of geography and calculations in connection with science experiments. Among other subjects, science of a general type based on practical work related to industries and surrounding natural conditions should be a dominant feature. This course would provide for that 50 per cent. of our secondary-school pupils who would not choose a university course, or had not decided on a trade or calling, or were prepared to postpone special preparation for it.

Further, pupils should not be driven into a course of study unsuited to their needs, merely to pass an examination necessary for entrance to the public service, the teaching profession, pharmacy, or other occupation. A pupil should, from any one of the above courses, be able to prepare for any of the qualifying examinations above mentioned. The matriculation examination should be used only for qualifying for university entrance and closely kindred purposes.

It is possible so to arrange affairs that each child may have the benefit of the broad, general, or universal foundation before he finds it necessary to direct his energies into narrower channels. It has been freely

mitted that the State should make this possible by extra expenditure if necessary. It is simply, in this connection, a policy of self-defence. "A specialty founded upon ignorance" is a detriment to the specialist and a menace to the State. "A specialty founded upon knowledge"—upon breadth and richness of experience—is a social asset, an insurance against narrowness and self-seeking.

(3) *The Continuation Course.*—The continuation course would provide for pupils who go direct from primary schools to a definite trade or occupation. This course, with the evening classes for definite technical training, would represent all that is really technical education in the sense that it has a direct effect on industrial efficiency. The course should centre round the trade interest, but should also provide a continuation of general education.

The end of all education is not merely the technically competent workman, but the citizen of the State, who not only seeks to advance his own welfare through his work, but also consciously places his work at the service of the community. The essential of the continuation school is, therefore, the attitude of regarding this stage of technical education as a means for mental and moral training.

The idea is to give these youths a pleasure in receiving instruction in their trade, and to make them good at their trade; not to educate them out of their trade into a higher one, but to make them good in the trade they are already engaged in, and good citizens. Employers would, of course, need to co-operate by granting the necessary facilities to their junior workers.

(4) *The Country Secondary Course.*—In the country secondary course the curriculum should include the ordinary cardinal subjects of secondary instruction as specified in the general secondary course (2). The main difference would be in regard to the material on which the instruction would be based.

Between a "ruralised" secondary school and a secondary school of the ordinary type the difference should be one, not of aim, but of teaching material. They should both aim at furnishing their pupils with the general intellectual equipment (as distinct from specialised knowledge) which is needful if they are to pursue with interest and intelligence any avocation, either in town or country, which they may be expected to follow. The rural bias to be given to the curriculum is not intended to supply a course of work which will be useful only to intending farmers. On the contrary, it aims at making the curriculum really more suitable in many rural schools than one of the ordinary type, both for those who intend to pursue rural industries and for the majority of those who do not. It would have a certain obvious appropriateness for the former class, but it should be capable also of supplying, in its own way, and with all the more effect because of its essentially practical character, a kind of education which would be valuable to the whole body of the pupils, whatever their subsequent occupations might be.

It is important, and, indeed, vital, that the work in each subject should, so far as possible, be illustrated by, and even based upon, the facts open to the pupils' own observation; but this does not mean that the

attempt should be made to substitute illustrations from everyday life for the principles which they illustrate.

Just because it draws its illustrations from the environment with which the pupils are in some degree familiar, and relies more on actual practice in the garden, the workshop, or the laboratory than on theoretical instruction from books, it may be expected in proper hands to stimulate interest and encourage mental alertness. From this point of view, then, the test which should be applied to each portion of the detailed schemes of work is not whether it has an obvious vocational utility, but whether it has purpose and value as a part of a sound secondary education conducted on practical lines.

**RESPONSIBILITY.**—The extension of facilities for free secondary education seems to demand that all who accept these privileges shall make adequate use of them. Secondary education costs the State about three times as much per head as does primary education, yet attendance at the secondary school may be spasmodic and broken off at will. It seems only just that when a pupil accepts a free place he should come under some effective obligation to make a proper use of the opportunities offered him and remain in attendance sufficiently long to derive substantial profit from the instruction.

The greatest service that all secondary schools, apart from their special university classes, can render is to break down the present absurd preference for clerkships and so-called genteel occupations. These have come to be regarded as "genteel" because formerly they were the only occupations for genteel and educated people. The far more skillful, scientific, manual and trade occupations of modern times would soon be equally "genteel," if that be worth anything, if our secondary-school pupils saw the wisdom of investing their education and intelligence in our skilled occupations, trades, and industries, where ample scope worthy of their advanced education would be found—nay, where it is demanded—if we are to make progress in industry and commerce.

## COMMERCIAL EDUCATION FOR A SECRETARIAL CAREER.

THERE are some things which cannot be said too often, and Mr. C. E. Town, the assistant-secretary of the London Chamber of Commerce, said some of them in a recent lecture delivered to the Secretaries' Association. He drew a clear distinction between education and instruction. Schools and colleges are amply supplied with instructors, and a vast amount of instruction is being given, but, for all that, there is, and has been for a considerable period, a lamentable deficiency in educators. The true educator is the broad scholar who has a personality denoting a strong will and a large nature, who has aptness for teaching, who is altruistic, warm-hearted, has the sympathetic touch, and possesses the magnetism of personal attachment.

Education in this country is not valued as it should be. There are some who begrudge the money spent on it. Parsimony in education is among the falsest of economies. The education of our people must be

on liberal lines, aiming at real training and the formation of character. Nevertheless, there is much useless extravagance in our educational system, and little short of criminal folly as it is, it calls for immediate attention and careful consideration. What is needed is a complete system of national education.

Commerce demands the most thorough education, the best brains to grasp it, skill to conduct it and to give effect to the principles upon which it is based. Commercial education is the only road to the attainment of a power which shall enable us to be masters of this art and science.

Mr. Town then considered the personal qualities essential: thoroughness, method, tact, punctuality, regularity, initiative, sobriety, industry, confidence, courage, fair dealing, patience, good temper, hard work, and self-discipline, directed by practical common sense. He compared the subjects of examination insisted upon by different bodies, and entered a plea for co-ordination of examinations. Secretaries are not merely intelligent shorthand typists. Neither experience nor academic acquirement is sufficient qualification in itself. A combination of the two is necessary. Secretaries classified according to the position they hold should possess the personal and educational qualifications suited to the particular requirements of their position. Each requires a specialised knowledge of one or more of a variety of subjects, including company law, methods and machinery of business, book-keeping and accountancy, banking and currency, commercial, company, and industrial law. Mr. Town strongly advocated that only those fully qualified should be allowed to use the name of secretary.

He concluded:—"Varied have been the suggestions for the coming of the great commercial and industrial struggle which will inevitably take place, none of them more wise, more productive of the success desired than the insistence on the greater efficiency of every unit of our commercial and industrial army. We must without a moment's delay mobilise, and, if possible, conscript, the brain-power of our people. But in whatever kind of effort made there must be concerted action; pupils, parents, teachers, and employers must be of one purpose and in agreement on the means to achieve it."

## CAMBRIDGE UNIVERSITY LOCAL EXAMINATIONS.

### SET SUBJECTS FOR JULY AND DECEMBER, 1918.

**RELIGIOUS KNOWLEDGE:**—*Preliminary.*—(a) St. Matthew i.-xiv.; or (for Jewish students) 2 Kings i.-xvii.; (b) 1 Samuel i.-xv.; (c) the Church Catechism.

*Juniors.*—(a) St. Matthew; or (for Jewish students) 2 Kings; (b) 1 Samuel; or Old Testament History from the descent of Jacob into Egypt to the election of Saul; (c) the Acts of the Apostles xiii.-xxviii.; (d) the Church Cathechism, and the Order for Morning and Evening Prayer in the Book of Common Prayer.

*Seniors.*—(a) St. Matthew; or (for Jewish students) 2 Kings; (b) the Acts of the Apostles, xiii.-xxviii.; (c) 1 Samuel; (d) Philippians and 1 Peter; (e) Litany and

Offices for Communion, Baptism, and Confirmation in the Book of Common Prayer; questions will be set on the history of these portions of the Prayer Book; special attention should be paid to the Nicene Creed; (f) the Church Catechism and the Order for Morning and Evening Prayer in the Book of Common Prayer.

**ENGLISH LANGUAGE AND LITERATURE:**—*Preliminary.*—(c) Scott, "Marmion," cantos i. and vi.; (d) Lamb, "Tales from Shakespeare": "Tempest," "As You Like It," "Merchant of Venice," "King Lear," "Twelfth Night," "Hamlet."

*Juniors.*—(b) Shakespeare, "A Midsummer Night's Dream"; (c) Scott, "Marmion," omitting the Introductions except that to canto i.; (d) Scott, "Woodstock"; (e) a paper of questions of a general, not a detailed, character on Stevenson, "Treasure Island," and "A Book of English Poetry," part i., pp. 124-169, ed. Woodward (Pitt Press).

*Seniors.*—(a) Shakespeare, "A Midsummer Night's Dream"; (b) Chaucer, "The Knightes Tale"; (c) G. Eliot, "Romola"; (d) a paper of questions of a general, not a detailed, character on any three of the four following books:—Shakespeare, "King Lear"; Kinglake, "Eothen"; Macaulay, "Essay on Temple"; Tennyson, "The Marriage of Geraint," "Geraint and Enid," "Gareth and Lynette"; (e) English literature from A.D. 1579.

**HISTORY, GEOGRAPHY, ETC.:**—*Preliminary.*—History of England. The paper will consist of three Sections on the periods (a) 1066 to 1485, (b) 1485 to 1688, (c) 1688 to 1815 respectively. Candidates may, if they wish, select questions from all three of the Sections, or may confine themselves to two or one of them.

Geography. The British Isles; and general Geography.

*Juniors.*—(a) History of England. The paper will consist of three Sections on the periods (a) 1066 to 1485, (b) 1485 to 1688, (c) 1688 to 1832 respectively. Candidates may, if they wish, select questions from all three of the Sections, or may confine themselves to two or one of them. (b) Outlines of the History of the British Empire from A.D. 1492 to A.D. 1784. (c) Outlines of Roman History from 133 B.C. to 44 B.C.

(d) Geography. Outlines of Physical Geography, and the British Isles, with one of the following regions: (i) Europe, (ii) Asia, (iii) Australasia.

*Seniors.*—(a) History of England. The paper will consist of three Sections on the periods (a) 55 B.C. to A.D. 1485, (b) 1485 to 1714, (c) 1714 to 1867 respectively. Candidates may, if they wish, select questions from all three of the Sections, or may confine themselves to two or one of them. (b) History of the British Empire from A.D. 1492 to A.D. 1784. (c) Outlines of Modern European History A.D. 1815-1878, with questions on the most important events in the periods 1789-1814 and 1879-1910. (d) Roman History from 133 B.C. to 44 B.C.

(e) Geography. The Principles of Physical Geography and one of the following regions: (i) Europe (including the British Isles), (ii) Asia, (iii) Australasia.

**LATIN:**—*Preliminary.*—G. M. Edwards, "Horatius and other Stories" (Pitt Press).

*Juniors.*—(a) Cæsar, "De Bello Gallico," IV., 20-36, V., 4-23; (b) Cæsar, "De Bello Gallico," V.,

25-58; (c) Virgil, "Æneid," VIII., 1-368; (d) Virgil, "Æneid," VIII., 369-731. Any two of these four to be taken.

*Seniors*.—Cicero, "Pro Roscio Amerino"; or Livy, XXII., 1-51; Virgil, "Æneid," VIII.; or Horace, "Odes," III.

*Greek*.—*Juniors*: (a) Xenophon, "Anabasis," V., 1-4; (b) Xenophon, "Anabasis," V., 5-8; (c) Scenes from the "Antigone" (Clarendon Press), 1-367; (d) Scenes from the "Antigone" (Clarendon Press), 368-711. Any two of these four to be taken.

*Seniors*.—Thucydides, I., 24-87; or Plato, "Crito" and "Euthyphro"; Sophocles, "Antigone"; or Homer, "Iliad," IX., X., 1-298.

*Music*.—*Seniors*.—Parry's "Studies of Great Composers," chaps. 7, 11, 12.

## ITEMS OF INTEREST.

### GENERAL.

THE Education Reform Council has arranged meetings on January 3rd in connection with the Conference of Educational Associations. At 10.15 a.m. Sir Alfred Keogh will preside at a discussion on "Teaching and Learning," in which Prof. Gilbert Murray, Prof. John Adams, Miss Robertson, and Mr. Nowell Smith will take part. At 3 p.m. Sir Henry Miers will take the chair, and Dr. Michael Sadler, Mr. A. C. Coffin, and others will speak on "Reforms in Educational Organisation."

THE annual general meeting of the Incorporated Association of Assistant-masters in Secondary Schools will be held at University College, Gower Street, W.C., on Wednesday, January 3rd. An address will be given by the Right Rev. J. E. C. Welldon, Dean of Manchester, on "Some Educational Lessons of the War," and the following resolutions will be submitted:—(1) That, in the opinion of this association, Greek should not be a compulsory subject for either the Responsions Examination of the University of Oxford, or the Previous Examination of the University of Cambridge, or for the examinations which are accepted as equivalents by these universities. (2) That, as the primary need for the future of education is an adequate supply of well-qualified teachers of the right type, the first essentials of any reform in the existing educational system are:—(a) a national salaries system, on the lines of the I.A.A.M. model salary scale, with an additional allowance for living expenses in the more expensive centres; (b) a national pension scheme; (c) security of tenure; (d) the establishment of a general system of transfer of teachers, so that, if necessary, a teacher may move from one school to another, without loss of position, salary, or pension rights. (3) That any scheme of educational reform should provide for the education of boys to the age of eighteen. (4) That educational control should be rendered more effective by grouping local educational authorities round universities as centres.

THE eleventh annual general meeting of the Historical Association will be held at University College, Gower Street, London, W.C., on Friday, January 12th, and Saturday, January 13th, 1917. The annual

address will be given by Mr. A. L. Smith, master of Balliol College, Oxford, and the following resolutions, proposed by Mr. C. H. K. Marten and seconded by Miss R. R. Reid, will be discussed:—(1) The value of historical teaching consists only in part in the information conveyed; it lies chiefly in the training of the pupils to discern through the details the main lines of historical development, and to understand something of the conditions—social, political, moral, intellectual, and economic—that have moulded the present. The study of history, moreover, provides valuable training in accurate reasoning, in the formation of thoughtful judgment, and in the expression of the results in a clear and attractive form. Throughout the curriculum these aims should be kept in view by the teachers, due regard being paid to the stage the pupils have reached. (2) The study of history should be approached through that of the political community in which the pupils live. It should be treated in relation to the history of the British Empire as a whole, the growth of which should form a more important part of the historical curriculum than it has done hitherto. The outlines of general history should be explained so as to make intelligible the development of civilisation and our relations with other peoples. It is advisable that in every grade of education—primary, secondary, and university—there should be an increased study of recent history, care being taken to deal with events in an impartial and sober spirit.

IN a statement to a deputation from the Board of Scientific Societies on December 1st Lord Crewe, speaking as President of the Board of Education, on the subject of technical instruction said that the present regulations under which technical schools receive public money, apart from university institutions, are not up to date. The Board of Education is going to discuss with the local authorities and governors of schools new draft regulations which it is hoped will simplify administration and stiffen instruction. The Government has decided that special increases shall be made in the Estimates of the Board of Education to assist local authorities. A further point of special importance is to make improved arrangements for the training of technical teachers and for scholarships to carry on to the universities selected industrial students.

THE Government has also decided to establish a separate Department of Scientific and Industrial Research for Great Britain and Ireland, under the Lord President of the Council, with the President of the Board of Education as vice-president. Subject to the consent of Parliament, a large sum of money is to be placed at the disposal of the new department, to be used as a fund for the conduct of research. A Royal Charter has been granted to the official members of the Committee of the Privy Council for Scientific and Industrial Research, under the title "Imperial Trust for the Encouragement of Scientific and Industrial Research," with power to accept and dispose of funds, including sums voted by Parliament, in furtherance of the objects for which it has been established. A substantial gift has been made already by two members of the Institution of Mechanical Engineers for research in mechanical engineering.

THE Lords Commissioners of his Majesty's Treasury have appointed a committee to consider and report upon the existing scheme of examination for Class I. of the Home Civil Service; to submit for the consideration of the Lords Commissioners a revised scheme such as they may judge to be best adapted for the selection of the type of officer required for that class of the Civil Service, and at the same time most advantageous to the higher education of this country; and, in framing such a scheme, to take into account, so far as possible, the various other purposes which the scheme in question has hitherto served, and to consult the India Office, the Foreign Office, and the Colonial Office as to their requirements, in so far as they differ from those of the Home Civil Service. The committee will consist of Mr. Stanley Leathes, C.B., First Civil Service Commissioner (chairman); Sir Alfred Ewing, K.C.B., Vice-Chancellor of the University of Edinburgh; Sir Henry A. Miers, Vice-Chancellor of the University of Manchester; Dr. H. A. L. Fisher, who has been appointed Minister for Education; and Prof. W. G. Adams, Gladstone Professor of Political Theory and Institutions in the University of Oxford. The secretary to the committee is Mr. D. B. Mair, Civil Service Commission, Burlington Gardens, W.

WE learn from the *Times* that the Cinematograph Trade Council, having petitioned the National Council of Public Morals to institute an independent inquiry into the physical, social, educational, and moral influences of the kinema, with special reference to young people, the National Council has decided to do so, and has invited the following, among others, to constitute the Commission:—The Bishop of Birmingham (president); Sir Edward W. Brabrook, C.B.; Monsignor Canon W. F. Brown; Mr. T. P. O'Connor, M.P.; Mr. C. W. Crook, president, N.U.T.; Sir W. F. Barrett; Dr. Alfred Garvie, New College, London; Prof. H. Gollancz; Dr. C. W. Kimmins; Mr. W. G. King, secretary, Cinematograph Exhibitors' Association; Sir John Kirk, director, Ragged School Union; Mr. Sidney Lamert, director and general manager, London Film Company, Ltd.; Rev. F. B. Meyer; Mr. A. E. Newbould, chairman, Cinematograph Exhibitors' Association; Dr. C. W. Saleeby; Dr. Mary Scharlieb; Rev. Carey Bonner, secretary, Sunday School Union; Mrs. Burgwin; and Rev. J. Marchant (secretary). The Commission is (1) to consider the present position and future development of the cinematograph, with special reference to its social and educational value and possibilities; (2) to investigate the nature and extent of the complaints which have been made against cinematograph exhibitions, and to consider conditions of Sunday opening, etc.; (3) to publish the evidence taken, together with its findings and recommendations. The council would be obliged if persons or organisations who have any information likely to be of use in this inquiry, or who desire to appear as witnesses, would communicate with the Rev. J. Marchant, Cinematograph Commission, National Council of Public Morals, 42, Great Russell Street, London, W.C.

THE General Medical Council has adopted by a

majority the proposal to make Latin optional in the medical higher preliminary examination. The Education Committee of the council, in a report on the compulsory inclusion of Latin in the medical preliminary examination, expressed the view that the question as to the place of Latin might with advantage be discussed. The committee expressed the opinion that the possession by a student of the senior leaving examination certificate or its equivalent, or a matriculation certificate of the universities, affords ample evidence that all the objects of the council in prescribing a preliminary examination in general knowledge are fully realised. It recommended the council to accept this certificate without further proviso than that it should embrace at least four subjects, including English and mathematics, the two or more additional subjects to be chosen from among the principal parts of the school curriculum. A proposal to make Latin optional in the preliminary examination of candidates for admission to the medical curriculum belonging to the junior class was referred back.

THE annual meetings of the Geographical Association will be held on Friday, January 5th, and Saturday, January 6th, 1917, at the London Day Training College, Southampton Row, W.C. After the presidential address, there will be a discussion on the value of modelling in the early teaching of geography, to be opened by Miss N. Catty. Prof. H. J. Fleure will give a lecture on regions in human geography, with special reference to Europe, and a discussion on the resolutions drawn up by five associations (now the Council of Humanistic Studies) will be opened by Mr. H. J. Mackinder. On January 6th there will be a joint meeting of the Geographical and Mathematical Associations to discuss the teaching of map projections; the discussion will be opened by Prof. T. P. Nunn.

IN his presidential address to the London Teachers' Association on "Some Educational Reforms," Mr. F. E. Wolstenholme made an earnest plea for the recognition of teaching as a profession. The first great reform must be the appreciation by the people of England of the value of all knowledge—humanistic, scientific, and technical. They must be shown unmistakably that those who devote their lives to the education of the young, whether in primary or secondary school, in college or university, are performing work of prime national importance. Recent economies in education indicate that the authorities are more nearly concerned with the reduction of expenditure than with the welfare of education. This tends to belittle the teacher, and should cease. Let there be a "Faculty of Teaching," and let the training of all entrants to the profession be of university standard. The status of the teacher will then be raised, and the people will think that education is worth having. The next step will be the unification of the schools; advisory councils should advise local authorities to establish junior or primary schools and senior or secondary schools to carry all children to the age of sixteen by a system of free education. Finally, science, technical, and commercial schools should be established as part-

time day schools for the further education of the adolescents. Such a scheme, suited to each locality, means a tremendous economy as compared with the overlapping extravagance of present arrangements.

THE London County Council's special classes for the training of educated women to fill temporary posts in Government, insurance, and railway offices, and in banks have recently terminated. In addition to three weeks' courses which served as an introduction to clerical occupations, ten weeks' courses were provided for shorthand-typists. Intending students were interviewed at the Education Office, and unless their general education was satisfactory were referred to employment-exchanges or to the courses for munition workers. Many applications were received from Ireland and the provinces, and these were referred to the local education authorities. From various causes the quality of the applicants declined, but the work was distinctly serviceable during the early months of last year. The short courses lasted for fifteen hours a week, and the longer courses for thirty hours a week. More than 1,700 students were admitted, of whom 1,200 passed the respective examinations. The official records show that more than 90 per cent. of the successful students obtained employment, a good many of them in the council's own offices. There were only seventy-two students admitted to the shorthand-typist courses.

A PAPER recently read by Mr. F. V. Burridge, principal of the L.C.C. Central School of Arts and Crafts, at the Royal Academy, on "The Workshop in Education," is published in *Education* for November 24th last. Our education, he urged, lacks character because it is not an orderly developed whole arising from a national conception. There should be a reconsideration of the essential elements of instruction to provide the means for the development of types of mind which cannot find adequate expression under existing curricula. Youth is, at present, being trained in trade schools, or in highly specialised departments of secondary schools, and the training may degenerate into the antithesis of education. There is no widespread enthusiasm for education, because it makes no appeal to the imagination; it is a task. The most numerous workers in the country are the producers. Workmanship as science is accepted, but art is generally understood to be a thing apart, a decorative and purchasable luxury. Yet art must be recognised as a necessity to give us a truer appreciation and use of our country and of ourselves. Such a recognition of art means exact thinking, quality, workmanship. Fundamentally drawing and workmanship must be treated as essentials throughout any properly organised scheme of national education.

THE co-optation of secondary-school teachers upon educational bodies is the subject of a report in the A.M.A. *Circular* for November. In Bedfordshire, Hampshire, and West Sussex there are advisory committees, which contain representatives of secondary schools; it is suggested that the method is not so satisfactory as the method of co-optation. The headmasters of secondary schools elect a secondary-school representative for co-optation on the education author-

ity in Berkshire, Dorset, Essex, Northamptonshire, West Suffolk, Warwickshire, and Worcestershire. In Staffordshire there are two representatives selected by the County Council. In Cheshire, Derbyshire, Hertfordshire, Lancashire, Leicestershire, and Shropshire the representatives are variously selected. Only in three county boroughs—Bolton, Hastings, and Wigan—are there secondary-school representatives co-opted on the education authority. The report suggests that the acting teacher makes a better representative than a teacher who has retired from practice, that a class-teacher is better than a head-teacher, and that, in those areas where there is no single body which includes all secondary-school teachers, the Teachers' Registration Council should be asked to recommend a teacher for co-optation.

THE annual report for 1915 of the chief medical officer of the Board of Education has been issued, and records, though not so fully as in normal times, the activities of the school medical service of the local education authorities in England and Wales, carried out under the general direction of the Board. The duty of this service, as laid down by Sir George Newman, is indeed a colossal one. From the six million children attending the primary schools it undertakes to select the ailing children, to make available the means of treatment, to provide the conditions of health and remove the conditions of ill-health for normal children, and to lay the foundations of a sound physique in childhood and youth. The report reminds us of the startling fact that a quarter of a million children of school age are seriously crippled, invalidated, or disabled, whilst not fewer than a million (one in every six) are so physically or mentally defective or diseased as to be unable to derive reasonable benefit from the education which the State provides. In each of the three age groups into which the children are divided—the entrants, the eight-year-olds, and the leavers—a heavy though varying bill of disease is presented. Looking backward, it is lamentable to think of the millions of children who have been subjected to compulsory "education" under these conditions. Looking forward, it is cheering to reflect that at last the facts are being brought to light, and are already to some extent being dealt with.

A GIFT of £10,000 from Mr. Henry Laming to Queen's College, Oxford, has enabled the provost and fellows to found four Laming scholarships at Queen's College in Modern Languages. The scholarships are open to boys educated at Cheltenham College. One scholarship is to be awarded annually after examination, provided that a suitable candidate presents himself, and will be tenable for two years in the first instance. The successful candidate must have been educated at Cheltenham for two years preceding the day of election or the date of his matriculation. The value of the scholarship is £100 per annum, and may, in certain circumstances, be renewed. As a reserve fund grows up supplementary grants towards foreign residence, which is obligatory, may be made. It is hoped by this means to encourage boys to look for a career either in the diplomatic service or in the consular service of the Crown, and in business abroad after a university course.

THE appearance of the "Cambridge University Calendar" for 1916-17 may well be made the occasion for a note on its form. The Calendar was first issued in 1796, and in accordance with the common tendency of such publications it gradually grew to an unhandy size. Owing to its unwieldy bulk in recent editions the authorities have decided to issue the historical matter in a separate book, the "Cambridge Historical Register." The size of the Calendar has further been reduced by the omission of information about examinations, etc., which is contained in the useful "Students' Handbook to the University and Colleges of Cambridge." The part of the Calendar to which one naturally turns first is the special section dealing with the war as it has affected the University. From records revised up to May, 1916, it appears that about 12,000 Cambridge men were on military service, of whom about 850 had been killed, 1,000 wounded, and 100 reported as missing. As against 3,180 undergraduates in the Easter term of 1914, there were only 1,100 at the corresponding period of 1915, and only 700 in 1916. The finances of the University and of the colleges are, of course, affected by the diminution in the number of students. The war section of the Calendar explains also the constitution and work of the War Committee, the Officers Training Corps, the School of Instruction, and the various emergency measures adopted by the University in view of war conditions.

THE Hampstead School of the King Alfred School Society and Mr. John Russell are the subjects of an appreciative study of a new ideal in education in the *Christian Commonwealth* for November 29th. Co-education is a cardinal principle of the school, which numbers ninety-eight day pupils. Mr. Russell finds greater difference in teachability between individuals than exists between girl and boy. School periods rarely exceed half an hour, but pupils who give good reasons are allowed to continue and complete a piece of work at which they are engaged, despite time-table limits. There are free periods when the child selects his own form of activity; a watchful guidance prevents this freedom from developing into an exclusive attention to one subject. Initiative and independence are thoroughly encouraged. There are no prizes, no marks, no external examinations, and usually no home-work. There are also no "lines," "drill," "detention," or corporal punishment; the child learns to govern himself. The pupils are trained to live in co-operative harmony as independent, self-governing, enterprising, understanding, public-spirited men and women. Much of the teaching is devoted to self-activity in workshop, laboratory, and playground. The children learn various crafts and initiate their own games. Parents are encouraged to visit the school, and have complete liberty to come and go while the school is at work.

THE enormous growth and the many-sided activities of Columbia University are discussed in the last annual report of President Butler. The most striking feature of the report is the statement that Columbia University is under-capitalised to the extent of £6,000,000. President Butler shows that this large amount must be added to the resources of the University before the

trustees can solve the problems of education and public service that are pressing upon them. Among important needs is the project to develop industrial and engineering research and to articulate the work of the research laboratories with the requirements of the nation's industries. To carry out the plan it is estimated that the sum of £1,200,000 is needed. Some idea of the task confronting the trustees can be gathered from the fact that to increase by £200 the salary of each professor now on the rolls of Columbia University would cost £67,000 annually, or the income on an endowment of about £1,400,000. The deficiency in the cost of maintaining the University for the current year is estimated at £18,530.

THE centenary number of the *Free School Magazine*, October, 1916, celebrates the anniversary of the foundation of the Penang Free School in 1815 or 1816, upon a site granted by the Hon. East India Company. In the early years those who could afford it paid one dollar a month; at the present time the boys pay either three dollars or two and a half dollars a month, and there are eighteen free places. The boys number about 850, of whom 82 per cent. are Chinese. The most famous headmaster was Mr. W. Hargreaves, who found the school in 1891 to be a second-rate elementary school, and left it in 1904 as one of the finest schools in the Straits Settlements. Probably the most notable alumnus of the school was Wu Lien Teh, who describes in the magazine his successful career at Cambridge, where his tutor was Sir Napier Shaw, at St. Mary's Hospital, the Liverpool School of Tropical Medicine, Halle University, and the Pasteur Institute, all of which arose from his position as Queen's Scholar of the school. This famous doctor finally determined to devote his energies to the alleviation of suffering in China, and is now chief of the Manchurian Plague Prevention Service, Harbin, where he has done notable work in conquering the plague. The school has a cadet corps and a scout troop, and the favourite game is football, frequently played without footgear. The house system is adopted for games, which include cricket, badminton, and sports.

"PRESENT Tendencies in Teaching Elementary Science" forms the subject of a message to American teachers in the *New York Educational Review* for November. In 1893 Principal Eliot's committee of ten prescribed one year's work in science for American high schools. Recently it has been suggested that science work should occupy two years, and the writer, Mr. J. G. Coulter, suggests a scheme of real value. The boy on the threshold of secondary education is fresh from the great glimpse that geography gives of the physical world in which he lives. He is ready to go on from that point; he wants to understand his own place in the world. So the two-year course will show him life and its controls, its laws and its inescapable conditions, its fundamental needs and its wonderful possibilities. In the autumn term he is shown the setting of the stage for life, the great primitive and permanent controls of life, heat and light, gravitation, air, water, soil, and the dynamics of topography. Then in the spring term he turns to plants, their relations to soil and air and to the lives

men. Animals are taken in the next term; September, when insects abound, is the best month of all for the approach to animal studies. Man is reached in the last term of the course. His modern adjustments in keeping with ancient and continuing primal needs; the body as a fine instrument that works effectively despite the artificial conditions that civilisation imposes upon it—these subjects fittingly crown the course.

"THE Professional School *versus* the College in the Training of Secondary Teachers" is the title of an article in *School and Society* for October 28th, in which the writer takes the opposite view to that which has become fashionable of late in England. The trainer of teachers finds, as a matter of experience, that it is a great advantage to have the pedagogical courses parallel with the academic courses in the training of teachers. The most serious problems of secondary-school teaching to-day in America are not those of scholarship; they are professional problems relating to discipline, to the use of community resources for school funds and school activities to meet community needs, and to other matters which can find no place in the college atmosphere of the academic type. All the great educational reforms in secondary education in the United States during the past fifty years have been effected in spite of the opposition of the colleges—sometimes of the most bitter kind. College antagonism is based upon a supposed loss of culture which follows the absorption in a training school, yet educational philosophers have shown that culture does not lie in any specific subject-matter, and that discipline does not come through formal drill. The principles of education are surely equivalent to those of economics, and educational psychology of equal value with experimental or abnormal psychology from the point of view of student courses for training men and women. The writer is Mr. W. G. Chambers, of the School of Education, University of Pittsburgh.

#### SCOTTISH.

THE School Board of Glasgow is responsible for a new departure in educational policy. Some years ago it started an open-air school for defective children, and since then has built another two for this class of pupils. The working of these schools has proved so effective that the Board resolved to apply the same principle to a school for normal children, and recently a school of this type in Bernard Street, Calton, was opened. The new school accommodates 800 pupils, and has been equipped in the most complete and modern fashion. By sliding doors, apertures, and other devices, the circulation of currents of fresh air is maintained continuously in the rooms. A "fresh-air" school rather than an "open-air" school accurately describes its character, but even then it is a big advance on anything previously seen in this country. The school is intended for supplementary pupils above twelve years of age, and it is satisfactory to find the School Board limiting the accommodation to 800. It is not easy to fix absolutely the limit of numbers for effective work in school, but most people will agree that 800 is above rather than below the maximum possible. It is earnestly to be hoped that the

new departure marks the death of the "barrack" school that has been popular for the past thirty years. There is one serious drawback to the working of the school. It is situated between two main arteries of heavy traffic, and it is difficult to see how work can be done with partitions open to the street in such a situation.

AT the annual meeting of the Classical Association of Scotland, Prof. Burnet, St. Andrews, was elected president, and delivered an address on the present position of humanism. He predicted that they would see in the near future a classical renaissance. He pointed out that humanists were not on their defence, as they had a work to do which no one else could accomplish. Modern science was not the enemy, but the child, of humanism. When people attacked humanistic culture they were thinking, not of science, but of the application of science to industry. That they had failed in this department as compared with their greatest rivals there was no doubt, but the fault lay with the business men who had failed to utilise the service of science to the fullest extent. The universities prior to the war had been training more men of scientific ability than could be employed. The greatest need of Europe after the war would be a revival of humanism, and he did not believe that their lost European civilisation could be restored in any other way than by a return to what was its source. The future of science itself depended on this, as there could be no place for science in a society organised on other than humane lines.

THE problem of juvenile delinquency has been again brought prominently before the public by the reports of investigations into the subject in Glasgow and Edinburgh. In these centres there is ample evidence that there has been a serious increase in the number of juvenile crimes since the war began, and there is on the whole substantial agreement as to the causes of this. The root cause is held to be the relaxation of home discipline owing to so many fathers being on service. Something must also be allowed to the martial spirit, an excess of energy which can find no outlet save in mischief or crime. The ice-cream shop and the kinema are also held in varying degree to be partly responsible. The usual deterrents, admonition and fines, have failed to make any impression, and the more frequent use of the birch-rod is very generally recommended.

THE School Boards' Association held a special meeting to dispose of business arising out of the recent deputation to the Secretary for Scotland. The meeting, by a majority, approved of the principle of giving a war bonus to teachers, but refrained from affording any indication as to what the amount should be. They also approved of raising the compulsory day-school age in Scotland from fourteen to fifteen, and urged the institution of part-time day continuation classes for all young people between fifteen and eighteen years of age. Such classes should be partly vocational and partly cultural.

AT a meeting of the Women's Educational Union the proposals of the School Board of Glasgow in re-

gard to a war bonus for teachers were strongly criticised. The sums granted (7½ per cent. on salaries below £150 and 5 per cent. on salaries from £150 to £200) were held to be entirely inadequate to meet the necessities of the case, but the severest criticism was rightly reserved for the proposal that all teachers with less than two years' service should not participate in the bonus. More than 300 teachers come under this category, and as these are the poorest paid and the least likely to have any reserve of savings, the injustice of the discrimination is obvious. It was resolved to ask the Board to receive a deputation on the subject.

At a meeting of the Scottish Teachers' War Relief Fund the following sums were allocated:—Teachers' and Dependents' Fund, £1,875; Y.M.C.A., £150; Scottish Red Cross, £100; Belgian Relief, £100; Scottish Women's Hospital, £100; Rumanian Refugees, £100; Widows and Orphans of British Sailors, £50; various other funds, £100. The total subscriptions amount to £37,865. Up to date the fund has provided grants to the dependants of teachers who have fallen while on service to the amount of £370 per annum.

#### IRISH.

DURING the past month two Parliamentary reports have been issued of the Intermediate Education Board for Ireland. The first is the annual report for the year 1915, which should have appeared some months ago, but while it was being printed all the blocks were destroyed in April during the rebellion, and in consequence the printing had to be done over again. This report contains the usual summaries of the results of the intermediate examinations in June, 1915, the percentages of passes and honours in the different subjects of examination, a statement of accounts, and the amount of the school grant made to each school. The number of students entered for the examinations was 7,008 boys and 4,517 girls. The number examined was 6,392 boys and 4,088 girls. The percentage of those examined who passed was 61·2 for boys and 64·2 for girls; the percentage for both boys and girls was 62·4. The number of students to whom exhibitions were awarded was 319, viz.: boys, 199; girls, 120; and the number to whom prizes were awarded was 558, viz.: boys 402; girls, 156. In addition prizes were awarded for composition to sixty-three boys and sixty-four girls.

THE amount of the school grant paid to managers of schools on account of the examinations was £39,428, and the amount of the inspection grant was £8,026. The total intermediate grant to schools was therefore £47,454. The number of schools participating in the grant in 1915 was 327. The amount of bonus paid for choirs and orchestras was £1,496, and a further sum of £49 was awarded as prizes at a special competition for choirs and orchestras. The total income of the Board for 1915 was £84,286, the two chief items being local taxation account, £46,567, and interest on securities, £34,948. Apart from the grants to schools the chief items of expenditure were: administration, £6,794; inspection, £5,138; examinations, £13,675; and rewards, £6,552.

THE only other item of general interest in the report is a paragraph dealing with the Registration Council set up by the Lord Lieutenant. On this council the Intermediate Board has five members. Its first meeting was held on December 8th, 1915. It is now understood that the Registration Council has completed its task of framing regulations for an Irish Register of Intermediate Teachers, and that they have been submitted to his Excellency.

THE other report of the Intermediate Education Board for Ireland is issued under the Intermediate Education Act of 1914 as to the application of the teachers' salaries grant in 1915. This is the second report of this kind, and it is interesting to compare it with last year's. The total number of intermediate schools is 347, and of intermediate pupils as defined by the rules of the teachers' salaries grant 18,503, an average of fifty-three pupils per school. Of these, 225 schools, with 12,742 pupils, were under Roman Catholic management, an average of fifty-six pupils per school, and 122, with 5,761 pupils, were under non-Roman Catholic management, an average of forty-seven pupils per school. In the Roman Catholic schools the number of duly qualified lay teachers was 125, an average of one for every 102 pupils, and in non-Roman Catholic schools the number was 273, an average of one for every twenty-one pupils. The total number of Roman Catholic lay teachers was 459, and of non-Roman Catholic lay teachers 688, making a total of 1,147 lay teachers altogether. The difference in the number of Roman Catholic and non-Roman Catholic lay teachers is accounted for by the large number of Roman Catholic clerical teachers. It is very interesting to note that the total of qualified Roman Catholic lay teachers rose from 46 in 1914 to 125 in 1915, and of non-Roman Catholic lay teachers from 237 to 273. The highest salaries paid to a Roman Catholic lay assistant teacher were £160 non-resident and £150 resident. Among the Protestant assistant-masters were a few receiving more than £300, and a fair number more than £200.

THE Classical Association of Ireland has arranged for this winter a course of four lectures on the Roman Empire; two of these were delivered in December, and the other two will be delivered in February and March. The first was by the Rev. Prof. H. Browne, of University College, Dublin, on "Hadrian and the Roman Wall"; the second by Dr. L. C. Purser, senior fellow of Trinity College, on "The Boundaries of the Roman Empire." Mr. Alton will lecture on February 28th on "Domitian and his Dalmatian Home," and Prof. Semple, of University College, Dublin, on March 14th, on "Portraits of the Roman Emperors and their Wives."

AT the entrance examination of Queen's University, Belfast, this autumn, 184 new students gained admittance, and at the opening ceremony of the session the Vice-Chancellor directed attention to the remarkable growth of the medical school, especially in the number of women students. There are now no fewer than seventy-eight women medical students attending classes in the University.

THE Department of Agriculture and Technical Instruction will offer next summer a limited number of scholarships and of teacherships in training, tenable at the Royal College of Science, Dublin. The scholarships are valued at £50 per annum, with free instruction, and the teacherships in training are worth £15. per week for the session of forty weeks, with free instruction. The competition will be confined to mathematics, experimental science, and drawing, with a general qualifying examination. Three similar teacherships in training will be offered, tenable at the Metropolitan School of Art, Dublin, one limited to men and one to women. The examination will be confined to drawing.

#### WELSH.

MR. RHYS ELLIS, Director of Education for Merthyr, recently submitted a report to the Education Committee on the subject of the influence of the cinema on school children; he attributed a certain share of the admitted increase in juvenile crime to the scenes exhibited, and remarked that the film was undoubtedly an excellent educational medium, but unless scrupulous care were exercised in the choice of pictures, the educational benefits that accrued were more than neutralised by the sight of undesirable pictures. This statement does not go nearly far enough as regards children, and applies in its present form equally to adults. To take a child to the cinema-house to see any, the most excellent, film whatever is not an educational proceeding at all. Unless the pupil is thoroughly prepared by a knowledge of both what he is to see and the order in which he is to see it, unless the sequence of events shown is sufficiently slow to enable it to be grasped, and unless the film is shown at least three times, preferably with intervals in which what has been seen can be discussed and, if possible, noted in writing, the average child will derive little educational benefit from the "show." Moreover, there are those who hold that the flicker and other imperfections of even the best pictures have a disastrous effect on children's eyesight, especially when, as usually happens in the case of class visits, they are put in the cheap places, too near the screen.

THE interest shown in proposals for improving agricultural education in Wales shows no sign of abatement. Carnarvon and Monmouth have farm-schools; a definite agricultural bias is called for in the intermediate schools in rural districts, some of which have already commenced promising experiments; most, if not all, of the counties have travelling teachers of dairy and agricultural subjects; and Aberystwyth and Bangor Colleges have important departments with experimental grounds. Resolutions were brought before the Glamorgan Chamber of Agriculture at a recent meeting, calling for the establishment in the University of regular faculties of agricultural science, veterinary science, and forestry, with full provision for training in these subjects up to degree standard and for adequate research work.

THE triangular duel between Barry, Neath, and Port Talbot for the honour of the 1918 visit of the National Eisteddfod bids fair to reach a settlement at last. The Central Committee of the Gorsedd has

asked the local committees to accept its arbitration in the matter; Barry has acceded to this request, and it is probable that the other towns will follow suit.

MUCH interest and a considerable amount of feeling have been aroused in the case of Mr. G. M. Grabner, senior master of Newport Intermediate School, whom the Education Committee recently decided to dismiss with six weeks' notice, after leaving him at his post since the beginning of the war. Mr. Grabner was born in Saxony, but left Germany before coming of age, and studied for some years in France. He has been teaching in this country for thirty years, twenty of them in his present post; his loyalty to the country of his adoption is unquestioned, and he is undeniably acceptable both socially and professionally; he married an Englishwoman, and his only son went out as a volunteer at the beginning of the war, and has been at the front ever since. The son, who was wounded, was recommended for the D.C.M., and was also recommended for a commission on the very day that his father appeared before the Education Committee. Mr. Grabner became a British subject in 1913. One objection to his continuing to hold his post was that in March of this year he had given to his pupils a piece of dictation, evidently from a German source, setting forth a German view of the war and of German character; it was, however, shown that the dictation was given to pupils who were preparing for the examination of the Royal Society of Arts, and was taken from an examination paper set by that society. A public meeting was called by advertisement containing the words, "It is better to be safe than sentimental; Max Grabner must go!" And the Education Committee confirmed the dismissal, but decided to pay Mr. Grabner a year's salary. An attempt to reopen the question was defeated by a number of the members leaving the room *en masse*, so that there was no quorum.

#### MILITARY TRAINING FOR SCHOOL CONTINGENTS.

*Elements of Military Education.* By W. A. Brockington. xvi+363 pp.+plates x. (Longmans.) 4s. 6d. net.

THIS book is "intended primarily for use in public and other secondary schools which have O.T.C. and cadet contingents officered by schoolmasters," and its purpose is to "indicate the primary features of military education, and the order in which they may be studied." It opens with a short chapter on discipline, in which classroom and military discipline and the help which the former may afford the latter are considered; but "discipline is a habit," and is continually kept in view in succeeding chapters. There follow next a short consideration of "the cadet curriculum," and the division of the various stages of cadet instruction between "*indoor* and *outdoor* work," the former including also those "parts of military instruction which are 'school work' pure and simple." This last consists of English (military phraseology and vocabulary, reports, descriptive work, etc.), geography (mainly map reading and field sketching), mechanics (theory of projectiles and elements of engineering), hygiene, military history, mathematics (mainly in connection with map work), physical training, perspective drawing, and handicraft.

The outdoor work is treated in the third and last chapters, on drill and "minor tactics" respectively, of which the former contains some drill "detail" (wherein,

as a matter of fact, there are one or two small differences from the latest official drill manual), but also gives many very useful tips and suggestions; while the latter, on "minor tactics," will certainly be the chapter of greatest interest to the majority of readers. It contains a great deal of valuable material for practical training in the field (including the "Memoranda of Common Errors," with which it closes, and which are quite too useful to need any apology), based to a considerable extent on the reports of the examinations for certificates A and B, the model of which is largely followed, and pointed with quotations from official military manuals and Haking's "Company Training."

The indoor work is treated (i) as to the more strictly military, in chaps. iv. and v., on the training of the eye and use of the rifle, based largely on the musketry regulations, with the addition of some suggestions for practical work to maintain interest; (ii) as to the subjects "already included in the school curriculum," in two chapters intended "to indicate only the special line of teaching which will render them of greatest value for the secondary purpose of cadet instruction." These contain a great deal more than any contingent as a whole could do, or even any average boy, and parts, such as the chemistry of rifle fire and elementary hygiene, general and military, are useful only for specialists, but, as covering the possible requirements of any cadet, their inclusion in the book may be of advantage, particularly in preparing a schedule of work for those boys who at the present crisis have to spend a considerable number of hours weekly on military studies.

Schoolmasters who are officers in their school contingents will find a great deal that is helpful and suggestive in this book. School work and conditions are continually kept in view, and a high standard is demanded from officer and cadet alike. Military precision in the preliminaries of field work is maintained in their practical application, and at the same time initiative and common sense are kept well to the front. The suggestions for training are definite and clear, and though a few formal plates on infantry formations for protective detachments might have been advantageously included, good and helpful ideas will be found on each of the various parts of O.T.C. training work, while the arrangement of the book and the complete table of contents make it easy to look up quickly any particular point.

### BOOKS FOR THE CHEMISTRY LESSON.

(1) *A Text-book of Elementary Chemistry.* By F. M. Perkin and E. M. Jagers. 384 pp. (Constable.) 3s. net.

(2) *A Junior Chemistry.* By W. Willings. 280 pp. (Blackie.) 2s. 6d.

(3) *Chemistry for Rural Schools.* By E. Jones and J. Griffith. 184 pp. (Blackie.) 2s. 6d. net.

(4) *Chemistry (Second Stage).* By F. P. Armitage. xii+231 pp. (Longmans.) 2s. 6d.

(5) *A Laboratory Outline of Elementary Chemistry.* By A. Smith. 152 pp. (Bell.) 2s. net.

(6) *Elementary Practical Chemistry.* Part ii., *Analytical Chemistry, Qualitative and Quantitative.* By F. Clowes and J. B. Coleman. xvi+255 pp. (Churchill.) 3s. 6d. net.

(7) *Analytical Chemistry.* Based on the German text of F. P. Treadwell. Translated and revised by W. T. Hall. Vol. i., *Qualitative Analysis.* 538 pp. (Chapman and Hall.) 12s. 6d. net.

(1) This little manual is based on the course followed in the chemical laboratory of the Borough Poly-

technic both by adult and juvenile students. As this course was found to rouse a keen interest in the subject, the authors hope that it will find a wider sphere of usefulness in elementary chemical classes generally and as a handbook for private study.

The elements and compounds which are discussed in this book are: water, the air, chalk, carbon, its oxides and hydrides, nitrogen, chlorine and its hydride, sulphur and its compounds, phosphorus, and a few metals. The descriptions are simple and lucid, and there are plenty of illustrative experiments, both qualitative and quantitative, which can be performed by the student. There is an excellent chapter at the end of the book on technical processes, dealing in a simple yet accurate way with oils, soap, glycerine, coal-gas and coal-tar, dyes, perfumes, explosives, and iron. The authors will probably find their expectations of a wider usefulness for their course amply realised.

(2) It is exceedingly difficult to fathom the reasons which induce either author or publisher to produce such a book as this. It ploughs the same old furrows, and offers no novelty of treatment. It describes a course of experimental chemistry which is probably followed, more or less closely, in every secondary school which prepares its pupils for the Universities' Junior Local Examinations. The author is somewhat out of date in waving his iconoclastic sword at the dreadful habits which obtained twenty years ago. He objects, for example, to the young student worrying at too much theory; give him the elementary facts first, says Mr. Willings. "Many teachers believe that a first course in chemistry should not deal with the atomic theory and its consequential equations, but should concern itself with an investigation of the composition of bodies, their analysis and synthesis," is the truly encouraging statement in the preface, but the wily Mr. Willings, in his desire to be just to those benighted teachers who would add on to his statement the words, "and should prepare our pupils for the Junior Locals," carefully packs the necessary consequential equations into a convenient appendix, together with a handy list of the names and formulæ of the commoner compounds.

(3) This excellent little manual provides a course of work which is designed to appeal to students in rural secondary schools and agricultural colleges, seeing that it provides a knowledge of the fundamental principles of chemistry, a series of examples taken from the farm, the garden, and the dairy, and, finally, an elementary treatment of a range of important topics embracing the fixation of nitrogen, artificial manures, nutrition, and the composition of soils. The authors justly claim that their course, deriving its illustrative matter from the everyday experience of the country student, is as capable of laying the foundations of a general chemical knowledge as is the more common method of utilising the arts and industries. The authors should have every reason to believe that their manual will fill a long-felt want in the rural school.

(4) This book is a second-year text-book of a somewhat novel design. It is a laboratory guide for boys who are working, mainly individually, with a demonstrator's guidance. The first half is concerned with experiments on the laws of combination, acidic and basic salts, acidimetry and alkalinometry, composition and properties of water, the air, chlorine, nitrogen, sulphur, carbon, and lead. The experiments are carefully set out, and are followed by questions which are to be answered in the laboratory notebook and are to be submitted to the master in charge. Only at intervals does the form work as a whole and revise that portion of its studies which is common to all. The second half of the book is an expanded glossary or dictionary, giving, for example, details of the law

of multiples, molecular weight, nitrous oxide, nomenclature, red lead, reduction, vapour pressure, and vinegar. Apparently there is no provision for lecture work of any kind at this stage, the author making use of his glossary, and probably individual discussions—an excellent method where the conditions permit.

(5) This is the laboratory companion to Prof. Smith's "Text-book of Elementary Chemistry," and is intelligible only when used in connection with that work. From the point of view of most English teachers of chemistry, the book suffers from the extraordinary comprehensiveness which characterises American junior courses. For example, experiment 23 introduces the theory of ionisation, experiment 34 deals with starch and sugars; later exercises are concerned with the analysis of baking-powder, hydrolysis, esters, colloidal suspensions, food components, milk, flour, and molecular weight determinations by means of depression of freezing point and elevation of boiling point.

The author specifically states that he has adapted his edition to the practice in British schools.

(6) The mere fact that this well-known junior manual has reached its eighth edition proves its popularity and usefulness. For many years the same authors' larger handbook has been in use in most college laboratories, and the majority of chemists have been brought up on it. It is sufficient to say that the present book is in every way worthy of the authors' reputation. It comprises a complete school course of qualitative analysis, volumetric estimations, alkalimetry, acidimetry, use of dichromate and permanganate, iodine, silver, and thiocyanate solutions, together with the elements of gravimetric work. A new section contains full directions for the preparation of a considerable number of important inorganic compounds. Altogether the work is to be heartily commended.

(7) Prof. Treadwell, of Zürich, published in 1885, and later amplified in 1899, his text-book of analytical chemistry, which became at once a classic, in that not only was there included a course of analysis of remarkable comprehensiveness, but also each element was treated with a degree of detail uncommon in a work of this kind.

The translator has incorporated into the original text a considerable amount of new material. He has laid stress on the theoretical side of the subject, particularly with regard to the application of the mass action law, the ionisation theory, and the theory of oxidation and reduction. Furthermore, he expresses his obligation to Noyes's work on qualitative analysis and Talbot's on quantitative analysis. It will therefore be appreciated that this new edition of Treadwell is a treatise in which the fundamental principles of analysis are dealt with at considerable length.

Part i. contains seventy-five pages devoted to these underlying ideas. It is, in short, the physical chemistry of precipitation, oxidation, reduction, and indicators. This preliminary work is carried out most excellently, and will prove invaluable in connecting the student's lectures with experimental illustrations which he himself performs in his daily laboratory work. Part ii. deals with the reactions of the cations, and separations are based on the properties of the members of each group. Part iii. similarly treats of the properties of the anions. Part iv. is systematic, and is concerned with the full examination of elements, compounds, mixtures, alloys, and liquids. Part v. contains the reactions of the rarer metals. Together with its companion volume the new Treadwell will prove to be as popular and invaluable here as it has been abroad.

## RECENT SCHOOL BOOKS AND APPARATUS.

### History.

*The Foundation and Growth of the British Empire.* By J. A. Williamson. xii+290 pp. (Macmillan.) 2s. 6d.—This lucid and well-constructed text-book provides a sketch of the history of the British Empire from its beginnings in the Tudor period to the outbreak of the present great war. It arranges the story conveniently and memorably under the four main headings:—(1) The age of experiments, 1485–1603; (2) The first age of peaceful expansion, 1603–1688; (3) The age of gain and loss by conquest, 1689–1815; (4) The second age of peaceful expansion, 1815–1914. Within the limits of these divisions the leading facts of Imperial history are clearly and attractively set forth. Each chapter is accompanied by a concise summary of contents, and by a table of leading dates. The book is illustrated by eleven black-and-white maps. It should prove to be a valuable aid to that study of the development of the Empire which is certain to be stimulated by the crisis through which all the King's dominions are now passing.

*Mediaeval and Modern Times.* By J. H. Robinson. xii+777 pp. (Ginn.) 6s. 6d. net.—The sub-title of this work describes it as "an introduction to the history of Western Europe from the dissolution of the Roman Empire to the opening of the Great War of 1914." It is a revised and enlarged edition of a text-book written by the author fourteen years ago; it also incorporates large sections of the two-volumed "Outlines of European History" issued last year by Dr. Robinson in conjunction with Profs. Breasted and Beard.

The Middle Ages are dismissed in twelve chapters, which occupy just one-third of the book. They treat the period topically rather than chronologically, emphasising the main influences which went to the moulding of modern times. The story of the centuries subsequent to the Renaissance becomes increasingly full as it approaches the present day. The last chapter, entitled "Origin of the War of 1914," is of peculiar interest; it gives an impartial American opinion as to the causes which have plunged the Old World into the gigantic conflict now raging.

Dr. Robinson writes with grace and lucidity, and his opinions carry authority. The volume before us is rendered attractive by numerous illustrations, including a number of photographs reproduced by a remarkably effective lithographic process. There are no fewer than twenty-seven coloured maps, which serve to elucidate every period of the history. We can cordially commend this excellent summary.

*Bibliography of Political Theory.* By A. J. Carlyle and G. P. Gooch. (Historical Association Leaflet No. 42.) 8 pp. (22 Russell Square, W.C.) Free to members of the association.—Dr. A. J. Carlyle, author of the standard history of medieval political ideas, contributes the section on works belonging to the period extending from the beginning of the Christian era to the sixteenth century. Mr. G. P. Gooch, well known for his scholarly book on seventeenth-century democratic ideas, continues the survey to the present time. The bibliography should prove an invaluable assistance to students of the development of political thought.

*The German Colonial Empire: its Beginning and Ending.* By Paolo Giordani. Translated by Mrs. G. W. Hamilton. xiv+156 pp. (Bell.) 2s. 6d. net.—The Italian original of this sketch of German colonial enterprise was written and published last year

because its author felt that his countrymen had not realised "the eminently imperialistic character of this great war." He wished to raise their thoughts above the local interests of *Italia irredenta* and fix them upon the world-issues involved in the conflict. Hence in a series of chapters he emphasises the development since 1871 of Germany's "frantic need for expansion due to the spasmodic increment of her industries and to the great productivity of her people," traces the course of her colonial activities, and shows how her still unsatisfied ambitions led her into aggressive war. Signor Giordani's work, though brief, is of considerable value to those who wish to understand the causes of the war, and it is full of interesting information to students of imperial matters. Its usefulness as a reference book is enhanced by the inclusion of a number of statistical tables. The task of translation seems to have been skilfully executed.

### Geography.

*An Economic Geography of the British Empire.* By C. B. Thurstan. 372+xiii pp. Maps, diagrams, and a statistical appendix. (University of London Press, Ltd.) 3s. 6d.—This book is a summary of the main geographical facts regarding the Empire, and aims at providing the "recapitulation from the point of view of the British Empire" demanded by the geography syllabus for London Matriculation. A short introductory part deals with the Empire as a whole, and then the constituent units of the Empire are treated seriatim in a self-contained fashion. Mr. Thurstan does not include Manchester as a great English port; he accepts the "Central Asian furnace-flue" hypothesis for the explanation of the south-west monsoon; he suggests that the "tank" system of irrigation in Madras is due to the British Government, and asserts that large quantities of beet-sugar are imported into India from Western and Central Europe, while he does not state what happens to the exports of sugar from Mauritius. The maps and diagrams are clear and useful, and the statistical appendix is not by any means ambitious.

*The New Regional Geographies. I., The Americas.* By L. Brooks. 225+xiii pp. Maps, diagrams, and illustrations. (University of London Press, Ltd.) 3s.—This book is intended for the first year of the four years' course in secondary schools. By design the emphasis of this early work is laid upon physical geography; in the next two volumes the emphasis will be climatic and economic respectively. The results of this scheme are that the illustrations of physical facts are necessarily remote from the experience of British pupils, and that the United States, in which the economic aspect is probably of supreme importance, receives somewhat meagre treatment. The regional method adopted in the book shows at its best and worst in the final pages devoted to South America. The continent is treated as a whole under the heads of discovery, physical features, climate, natural vegetation, and natural regions, and then the final chapter provides a brief summary, roughly of a page each, for the countries of the continent. Useful exercises are appended to each chapter.

*The World We Live In.* Edited by Græme Williams. Vol. iii., pp. 465-605; maps and illustrations. (The Waverley Book Co.) 8s. 6d.—Nine of the thirteen articles in this volume are by Mr. R. J. Finch, who writes, in a vividly descriptive style, of the outstanding features which occur in British South Africa and the continent of North America. The section on Antarctica contains many of Mr. H. G. Ponting's most beautiful photographs, now included for

the first time in any book. The magazine style of this book is maintained by the large illustrative diagrams of a Rand gold-mine, a Kimberley diamond-mine, and the electrical control of the Panama Canal. In a work of this kind one expects that the illustrations should frequently be somewhat remote from the text, and this feature is strongly marked in the case of two maps of South Africa, "physical divisions" and "orography," both of which also occur in Herbertson's "Senior Geography."

*Nisbet's Self-Help Geography Series. The British Isles.* By H. R. Sweeting. 220 pp. Illustrations, some in colour; maps and diagrams. (Nisbet.)—This book has a novel outlook, and the method of treatment presents pleasing possibilities. The reader is introduced first of all to man's necessities, such as shelter, food, etc., and then he reads of the various ways in which man meets his needs. Under the conception "where men live" he reads about hamlets, villages, and towns. Models and contour maps are described. Scotland allows a discussion of highland, upland and lowland, trade and manufactures. Ireland introduces the effects of rainfall. Great Britain permits of a useful revision and summary of the preceding ideas. The book is decidedly worthy of inspection, if only on account of the freshness of its treatment. The contour maps would be better for a scale; some of the legends to the illustrations seem to be meaningless; but the questions at the end of each chapter should prove of high value.

*The Oxford Geographies. The Senior Geography.* By A. J. Herbertson and F. D. Herbertson. Fourth edition, revised by O. J. R. Howarth. (Clarendon Press.) 2s. 6d.—Mr. Howarth is responsible for two improvements in this well-known text-book. Some of the old maps have been removed in favour of maps of greater importance, while many of the other maps have been re-drawn and greatly improved. The introductory summary of "The Natural Regions of the World" has been amplified, although the student still has to apply this new knowledge to the matter of the subsequent pages as an exercise in geographical deduction.

### Mathematics.

*Dynamics.* Part i. By R. C. Fawdry. viii+177+ix pp. (Bell.) 3s.—In writing this companion volume to part i. of his "Statics," the author has aimed at providing a course of reading and experimental work suitable for boys who do not intend to specialise in mathematics. Limitations of time probably render it impossible to attempt to go beyond the application of the laws of motion to the rectilinear or uniform circular motion of a body under constant acceleration, but it seems a pity that boys should be deprived of even a glimpse of the application of dynamical principles to the motion of rigid bodies. There are many rotational problems of great interest which require for their solution no more mathematics than is assumed in this book, provided the moment of inertia is regarded as a quantity to be determined experimentally in the same way as mass. However, within the limits which he has imposed upon himself Mr. Fawdry has performed his task with the sure touch of one who is familiar with all the difficulties which beginners in this subject experience. The only point on which we feel disinclined to agree with him is in connection with the dynamical measure of force. He has discarded the pound while admitting the dyne. Seeing that these two forces are defined in a precisely similar manner, there does not seem to be any good ground for accepting the one while refusing the other. An inquisitive boy might well ask why the weight

of a gram is not taken as the unit of force in the metric system.

*Commercial Arithmetic and Accounts.* By A. R. Palmer and J. Stephenson. Parts i. and ii. xiv+524+516 pp. (Bell.) 3s. 6d. net; with answers, 4s. net; also separately, each part, 2s. net; with answers, 2s. 6d. net.—Everyone recognises that our nation will in the immediate future have to face a severe and increasing competition in commerce, and it can only hope to maintain its position by ensuring that our business men are thoroughly equipped with all needful knowledge. Calculation enters into all business transactions, and the changes and modifications in methods of calculation are so frequent and subtle that only students who have a thorough grounding in fundamental principles can cope with the exigencies that continually arise in modern mercantile transactions. The book's before us aim at providing this necessary training, and an examination of them convinces us that the student who assimilates the information they contain may enter upon a commercial career with good hope of achieving success. There is much more than arithmetic in them, for the authors have been at great pains to collect trustworthy and recent data regarding our Colonies and Allies. The reproductions in colour of current commercial documents form a useful feature of the work.

#### Science and Technology.

*Manuring for Higher Crop Production.* By Dr. E. J. Russell. 69 pp. (Cambridge University Press.) 1s. net.—At first sight the cost would seem to be excessive for so small a book, but a perusal of its sixty-nine pages will show that the money has been well spent. Dr. Russell has produced a book for the hour, and has crammed into its pages a wealth of excellent advice which our farmers will do well to study diligently and to act upon without delay. Written for farmers, the language is direct, easily understood, and usually free from unnecessary scientific terms, though strictly scientific. Chap. i. deals with the improvement of the soil, by tillage, by additions of lime, by green manuring, and by war on weeds. Chap. ii. deals forcibly with the manure-heap, how to conserve its valuable constituents and to make the best use of them, how to store the dung, and how to supplement it with artificials. Chap. iii. gives a concise account of the various artificials, their uses, and how to purchase and combine them. Chap. iv. treats of how to increase the yield of the various arable land crops; and chap. v. deals with grassland from the point of view of hay and pasture. There is an index which makes reference easy. The book is effectively illustrated.

*Illustrations of the British Flora.* Drawn by W. H. Fitch, with additions by W. G. Smith. Fourth, revised, edition. xvi+338 pp. (Reeve.) 9s. net.—The majority of these wood-cuts—1,315 in number—first appeared in the original illustrated edition of Bentham's well-known "Handbook of the British Flora." Though small, they show very clearly the "habit" of each plant, the characters of the leaves, and the general appearance of the inflorescence and flower, together with certain details on a larger scale. Careful drawings, when used to supplement verbal descriptions, often give greater help in the recognition of species than more pictorial illustrations, and the present collection is of proved value to students. This new edition contains a number of additional features which will increase its usefulness. The distinguishing characters of the various natural orders are quoted from Bentham's handbook, and for the first time synonyms, the English name, and an indication of the

colour of the flower are given below each engraving. It is a pity that the scale of the drawing has not been added as well. The book ought to be in the reference library of every school.

#### Religious Knowledge.

*Ezekiel.* Edited by A. B. Davidson and A. W. Streane. (Cambridge Bible for Schools.) lxii+404 pp. (Cambridge University Press.) 3s. 6d. net.—A pathetic interest attaches to this latest volume of a most admirable series. Dr. Streane, who revised the earlier edition by Dr. Davidson, and adapted it to the Revised Version, died just after he had completed his modernised revision. The book will stand as a worthy memorial of two notable Biblical scholars. It is almost an impertinence to attempt adequate praise of work so sound, so painstaking, and on so high a level. The analyses and explanations will be attractive to the ordinary reader; the critical and reconstructive help of the notes will make it invaluable to the serious student. It is one of the best and most notable additions to this set of commentaries in a sequence of revised editions, and its excellence and accuracy—so far as accuracy can be gauged in the case of a text so difficult and obscure—will guarantee its inclusion in the very small list of standard works on this imperfectly understood book.

### EDUCATIONAL BOOKS PUBLISHED DURING NOVEMBER, 1916.

(Compiled from information provided by the publishers.)

#### Modern Languages.

"Black's First German Book: Phonetic Transcription." By L. H. Althaus. 72+viii pp. (Black.) 1s. 6d.

"A School Russian Grammar." By E. G. Underwood. (Blackie.) 2s. 6d. net.

"A Progressive Russian Course." By P. M. Smirnoff. (Blackie.) 3s. 6d. net.

"A Manual of French Composition for Universities and the Higher Classes of Schools." By R. L. G. Ritchie and James M. Moore. Second impression. x+276 pp. (Cambridge University Press.) Reduction in price, 5s. net.

"Second Russian Book." By Nevill Forbes. 333 pp. (Clarendon Press.) 3s. 6d. net.

"Russian Grammar." By Nevill Forbes. Second edition. 276 pp. (Clarendon Press.) 6s. net.

Gerstäcker: "Der Wilddieb." 108 pp. (Harrap.) 1s. 8d.

"Exercises in Spanish Composition." By Prof. S. M. Waxman. 108 pp. (Harrap.) 1s. 6d.

"Spanish Self-Taught (Thimm's System)." By A. J. R. V. Garcia. (Entirely new book, rewritten.) 152 pp. (Marlborough.) Cloth, 1s. 6d. net; wrapper, 1s. net.

"Sinhalese Self-Taught." By Don M. de Z. Wickremasinghe. (A new volume in the Self-Taught Series.) 120 pp. (Marlborough.) Cloth, 2s. 6d. net; wrapper, 2s. net.

"Chinese Self-Taught." By Dr. J. Darrock. Second edition. 154 pp. (Marlborough.) Cloth, 5s. net; wrapper, 4s. net.

"Russian Self-Taught." By Capt. C. A. Thimm and J. Marshall. Fifth edition now ready, in Russian and Roman characters. 134 pp. (Marlborough.) Cloth, 2s. 6d. net; wrapper, 2s. net.

#### English: Grammar, Composition, Literature.

"The Rudiments of Criticism: A General Study of Poetic Form, with Illustrations from our own Poets."

By E. A. Greening Lamborn. 192 pp. (Clarendon Press.) 2s. 6d. net.

"English Dictation for Home Work." By Hardress O'Grady. 56+viii pp. (Constable.) 1s. 4d.

### History.

"The Battle of Jutland Bank." By C. Sanford Terry. Second edition. 100 pp. (Clarendon Press.) 6d. net, paper covers.

"The Year 1916 Illustrated." Edited by L. Gravesson, authors various. 220 pp. (Headley.) 3s. net.

"Foundation and Growth of the British Empire." By James A. Williamson. xii+290 pp. (Macmillan.) 2s. 6d.

### Geography.

"Sketch Maps Illustrating Important Phases in the Great War, with Historical Notes, August, 1914-May, 1916." By P. R. Clauss. (Blackie.) 1s. net.

"The Earliest Voyages Round the World, 1519-1617." By Philip F. Alexander. (Cambridge Travel Books.) xxiv+216 pp. (Cambridge University Press.) 3s. net.

A. J. Herbertson and F. D. Herbertson: "Senior Geography." Fourth edition, revised by O. J. R. Howarth. 364 pp. (Clarendon Press.) 2s. 6d.

"Graphic Geographies: The British Isles." By B. C. Wallis. With four coloured orographical maps and twenty-four maps in black and white, forming a combined Atlas and Text-Book for Beginners. 32 pp. (Macmillan.) 9d.

### Mathematics.

"Differential and Integral Calculus." By Dr. Clyde E. Love. xviii+344 pp. (Macmillan.) 9s. net.

### Science and Technology.

"Mining Mathematics: Senior Course." By S. N. Forrest. 324 pp. (Edward Arnold.) 5s. net.

"Text-book of Elementary Chemistry." By Dr. F. Mollwo Perkin and E. M. Jaggers. 384+viii pp. (Constable.) 3s. net.

"Class Book of Chemistry." Parts i.-iv. By G. C. Donington. xii+534 pp. (Macmillan.) 5s.

"Practical Experiments in Heat and Light." Containing more than 120 typical experiments, for use in school laboratories, or a first year in technical colleges. By W. St. B. Griffith and P. T. Petrie. 236+xxii pp. (Rivington.) One vol., 3s. 6d. net; or in two parts: "Heat," 2s. net; "Light," 1s. 6d. net.

### Art.

"The Cradle of Our Lord." Pictures by Daphne Allen, verses by John Oxenham. 32 pp. (Headley.) 1s. net.

### Pedagogy.

"The Adult School Lesson Handbook." By Adult School Lessons Committee. 176 pp. (Headley.) Paper, 6d.; cloth, 1s. net.

"Educational Measurements." By Dr. Daniel Starch. 202 pp. (Macmillan.) 5s. 6d. net.

"Mind Study for Beginners." By M. A. Wroe. 126 pp. (National Society's Depository.) 1s. 6d. net.

### Miscellaneous.

"Janus and Vesta: A Study of the World Crisis and After." By Benchara Branford. 316 pp. (Chatto and Windus.) 6s. net.

"The Industrial Outlook." By various writers, edited by H. Sanderson Furniss. 400 pp. (Chatto and Windus.) 3s. 6d. net.

"The Food Garden." By Wm. F. Rowles. 324 pp. (Headley.) 6s. net.

"Key to 'Book-keeping for Commercial Classes.'"

By J. R. Barnes and Alexander Sharples. 46 pp. (Macmillan.) 1s. 6d. net.

"Book-keeping and Commercial Practice." Vol. i. For first-year students. By H. S. Wainwright. viii+78 pp. (Macmillan.) 1s. 6d.

"The Way of Love." By S. Longman and H. Lee. 265 pp. (National Society's Depository.) Cloth, 2s. net; paper, 1s. 6d. net.

### CORRESPONDENCE.

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

#### A Defect in Education.

In the discussion on the shortcomings of education too little notice has thus far been taken of an alleged defect. It is often stated that before children go to school they ask no end of questions; they are observant, and want to know the why and the wherefore of everything they see; they take in all reasonable explanations. Yet after ten or more years of schooling they leave uninterested, without any desire to know, and without any capacity to learn. If this is true, then the expenditure on education is not only waste, but worse: it is doing practical harm. Here are some questions that teachers would do well to answer.

To what extent is the general statement true? In the cases in which it is true, what is the reason? Is the change due to the attitude of parents or children, or is it due to the fact that teachers fail to interest their pupils because they talk a language "not understood of" the pupils? Or is it the fault of the inspectors, whose visits induce the teachers to give lessons rather than help the children to learn and work? Or is the cause to be found in the system which gives so much time to reading and learning, and so little time to doing? Does the time-table offer so many subjects that the children have mental indigestion and a lasting distaste for more? Does the present-day teacher dole out with too liberal a hand pre-digested mental pabulum, and does he so cause the power of assimilation to atrophy?

City of London College.

FRED CHARLES.

### The School World.

A Monthly Magazine of Educational Work and Progress.

#### EDITORIAL AND PUBLISHING OFFICES.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 218.

FEBRUARY, 1917.

SIXPENCE.

## AN EDUCATED NATION.<sup>1</sup>

By Prof. GILBERT MURRAY, LL.D., D.Litt., F.B.A.

WHAT are some of the charges specially brought against our national system of education? That we spend too much time on classics and on literature and that Germany beats us because she concentrates on science? That charge is not at all true. It is the very reverse of the truth. Secondary education in Germany is far more classical than ours, and they have far more compulsory Greek and Latin. Just before the war, out of 400,000 boys receiving secondary education in Germany, 240,000 were at schools where Latin is compulsory; 170,000 were at schools where the compulsion covered both Latin and Greek—a much larger number, if I am not mistaken, than all the boys who received secondary education at all in this country (68,000 in England and Wales in 1908 in State-recognised secondary schools).

Again, in the *Realschulen* or purely modern schools of Germany, so far from physical science forming the main part of the curriculum, it has allotted to it the following proportion of time: in the lowest forms two hours a week out of twenty-five, in the highest six hours out of thirty-one.

No. The German secondary schools are, I believe, on the whole, much superior to ours; but it is not true that they give more time to science. It is just the opposite. Our secondary-school system has always had a marked bias towards physical science arising from the circumstances of its origin. It arose not from a real Act for providing secondary education, but from an expansion of the Technical Instruction Acts in 1889 and 1891. By a liberal interpretation of the phrase "technical instruction" Government assistance was given to the whole field of mathematics and science

and the commercial study of modern languages. And it is from this source that the municipal secondary schools arose.

I do not wish to dwell too long on this point. But in my own belief the most profound fault in our educational system is that where we ought to organise our system and grade our teaching simply by standards of intellectual capacity, we really do so by distinctions of class. Our upper-class boys in the public schools and universities are overdosed with classics and literature, and often compelled to learn Greek whether they are intellectually fit for it or not; while all through the middle and poorer ranks of the community boys and girls are almost absolutely debarred from the possibility of studying the classics at all—shut out, that is, on the mere ground of social inferiority, from a form of education which many high educational authorities in the country still regard as, for suitable temperaments and abilities, absolutely the best. These are two evils; I will not argue which is the worse; but both can be cured by the same remedy. Make it possible for all boys and girls, of all classes, to have the education for which they are intellectually suited. Allow the Oxford science-man to dispense with Greek if he wishes, and, at the same time, allow the Hellenically minded boy or girl in an average secondary school to have a fair chance of learning it.

As to our alleged neglect of science I will say little, for I have no first-hand understanding of the problem. But I will suggest in passing that it is probably a case not of neglect, but of bad organisation or low standards. There is certainly an immense number of institutions all over the country for teaching natural science. But, in any case, I am sure that, if my scientific colleagues at Oxford or Cambridge, or elsewhere, can indicate to us classical scholars and men of letters any way in which we can co-operate with them to raise the whole standard of scientific teaching in the country, our services are most ungrudgingly at their disposal.

<sup>1</sup> From the presidential address delivered on January 2nd, 1917, to the Teachers' Guild of Great Britain and Ireland at the Fifth Annual Conference of Educational Associations held in the University of London.

ingly at their disposal. There is no quarrel between true science and the true pursuit of history or letters. We are all forces in one army with one common enemy—the spirit that secretly hates education itself, that does not care to know or to understand or to live a better life, that seeks only to advertise and to make profits.

A third charge against us is that we neglect modern languages, and I fear that charge is intimately and rather disgracefully true. Many Englishmen are actually ashamed of speaking a foreign language, though, to do them justice, they seldom really commit the act which causes the shame. No doubt, nearly all educated Englishmen can read French, and perhaps most of them German also. But very few can speak them. And the ordinary commercial Englishman of the old school calmly takes for granted that it is not his business to learn the foreigner's language, but rather the foreigner's business to learn his. I remember once travelling in a large English trading-ship in the Mediterranean. The captain had been over twenty years at his work. He went regularly up and down among Greek and Italian ports, changing cargo. But in all the twenty years he had never thought fit to learn the rudiments of Italian or Greek. His method was, as soon as we came to port, to seize a big stick and grow very red in the face, and then, by pushing, swearing, and perspiring at every pore, to try to convey his meaning to a lot of Levantine dockers and stevedores, who grinned and wondered and obeyed and secretly pondered what a fool he was. There was an Austrian ship beside us at one port, where the captain was loading and unloading with perfect ease and ever so much quicker, simply because he spoke Greek.

That incident made me feel a little ashamed. And so does the fact, now so commonly recognised that we scarcely think twice about it, that German officers habitually speak English, and the same is true of a great many German privates, while our men, both officers and privates, can very seldom speak more than a few halting words of German. They are educated, and we are not. In some other countries the contrast is even more striking. Last year I was in Norway and Sweden addressing a good many meetings in different university towns. I spoke in English, without an interpreter, and my audiences, sometimes running above a thousand, seemed to have no difficulty in following. Just imagine a Swede or a Norwegian standing up here and addressing an audience in his own tongue!

Of course, this ignorance of foreign languages is not altogether our fault. It is in

part due to the fact that our language is a great language. It is so widely spread that an Englishman can travel all round the world without needing any other. We are also such a great trading nation that other nations must needs learn our language in order to trade with us; and, lastly, ours is such a vast and vital literature that we can satisfy most of our literary curiosity without much reading of foreign books. Small nations must of necessity learn their neighbours' languages; great nations are not equally forced. But I must say that it remains rather a disgrace and a clear sign of intellectual sloth if we allow the mere fact of our present bigness and wealth to induce us contentedly to acquiesce in being less educated than our neighbours. Our schools already spend a good deal of time on modern languages. It may well be that they ought to spend more. But I suspect the main vice lies in the quality of the work done rather than in its quantity. In any case, I am sure that we should use the time more seriously and with more concentrated purpose.

That is what we must do throughout the whole field. Use our time better and take our intellectual work more seriously. The fact is that German boys and girls, and I think French boys and girls too, work a good deal harder than ours, and demand less pleasure and less amusement. These are disagreeable things to say, but I think it is our duty to face them. Our standard of pleasure and comfort and expenditure, at any rate in the richer classes, is probably the highest that has ever been known in the history of the world. It is not as a rule vicious pleasure; quite the contrary, it is to a large extent in itself both healthy and innocent. But it simply occupies too large a place in life. I do not apply these criticisms to the working classes, for one very good reason: that it is not decent for a man with a couple of thousands a year to talk about plain living to men with thirty or forty shillings a week. But I suspect that the same spirit does, with modifications due to circumstances, run through pretty well the whole nation—a spirit which demands that life shall be somehow loose and easy-going, which refuses to take minute trouble over details, or to make the most of a few spare pennies of money or a few spare half-hours of time; a spirit, in particular, which loses both time and trouble, because it will not take the pains to think sharply and definitely before acting.

We want this spirit changed; we want a better husbanding of our vital powers; we want also a number of concrete and definite educational reforms.

In the elementary schools we want above all things smaller classes. Some few years

ago the Board of Education gave notice that it would in future refuse grants to any school which had classes of more than sixty. More than sixty indeed! The notice did good for a time; but, alas! the war has knocked that notice on the head, like so many more important things, and the classes are now running up again to impossible figures. Even sixty is far, far too much for proper elementary teaching. I know that some teachers say they like large classes. Those are teachers who enjoy lecturing rather than teaching, or who have developed some special technique for keeping a large class quiet. I can imagine a large class of children being rather fun for a certain rare type of teacher, like driving six horses abreast in a circus. But for most teachers and for all pupils I am sure it is entirely unfortunate. Little children need to be known personally and to be treated as separate individuals; the timid ones need to be encouraged, the quick and slapdash ones to be watched, those who have special tastes or gifts to be drawn out; it is not good for children to be treated like a public meeting. I think we should aim immediately at having no class larger than forty, and should remember in our hearts that that is a great deal too large. Of course, it will need money. It will need a great increase in the number of teachers and a certain amount of rebuilding where a school has not the proper number of rooms. But it is the first great step to be taken.

The next thing that we want is better teaching. We want teachers with more real culture behind them, who have not merely the minimum of knowledge necessary for setting the exercise and correcting the mistakes; they must have also that invaluable superfluity of knowledge which makes all the difference between an inspiring teacher and a dead teacher, which gives the particular lesson its due place and meaning, and sets doors open into a wider world.

I do not know that elementary-school teachers are more unsatisfactory than many other classes of citizens—than stockbrokers, for example, or commercial travellers. But it is more important to the community that they should be good. We must attract better people into the profession, and make the good people who are already there more satisfied with their work. I do not say that things are very bad now. The education authorities are very good authorities. I believe a good teacher will generally find the inspector and the Board appreciative, and that an original teacher will seldom be unduly baulked in his experiments. But, in the first place, salaries should be higher. If only some of the money spent on

dead bricks and mortar had been spent on live teachers' salaries! The conditions of life in school should be made less dull and repellent. Co-operation and social intercourse between teachers should be encouraged, and elementary-school teachers should be in every way encouraged to feel that they belong to the same profession as public-school masters and university dons, and are engaged upon the same all-important national work. This is a principle for which the Teachers' Guild has always stood, and which we should never forget to emphasise.

I think something could be done by throwing our net wider and making more possible entrances to the profession of elementary-school teacher. And I suspect that the bursary system, which has been tried on a generous scale, is not the best means of selecting good teachers. A bursary is apt to appeal to the sort of young man or woman who has no particular tastes or ambitions, but will be guided by the immediate offer of money down. What you want is to assure the clever young man or woman who has a taste for teaching that the teacher's life will afford a position of decent comfort and dignity and scope for interesting work. And, lastly, it is no good trying by increased salaries or better conditions to bribe into the teaching profession people who are merely on the look-out for the best-paid job they can find. To be any real good to their country, teachers must have a love of teaching, a consciousness of their mission, a sense that they are giving to the children who will be England a generation hence the best that they have in them, and that they rejoice in the gift.

On this matter I cannot generalise; but I know that after the disastrous war of 1870 in France, and after the great civil war in America, there were found men and women in abundance who threw themselves into the work of teaching with the spirit of missionaries, of faithful workers, who look for no reward except the glory of living and dying for their faith.

There are various other national needs of which I might speak. We need in the upper classes of society a good deal more hard work and less play. We need in the secondary schools some large differentiation of teaching, more or less such as they have in Germany, so that both the scientific and the humanist needs of the country may be supplied. We need a further development of medical inspection and care for health, but that we shall certainly achieve, and are already achieving. We badly need more supervision and help for boys and girls after they have left school, partly by continuation classes and partly by clubs.

We should see that all boys and girls, during those especially dangerous years in which they are just free from school and not yet entered fully into life, should have some society or club to which they still belong, and some "pastor or master" near at hand who can steer them out of their difficulties. I am inclined to look forward to a development in which continuation classes—in the day-time, of course, not merely at night, when the pupil is exhausted—should take care chiefly of the technical or vocational training, while the humane side, the culture of the mind and the imagination, should be left mostly to the clubs, for this simple reason: that you can teach a boy to mind a machine whether he likes it or not, but you can scarcely hope to teach him the meaning of poetry or art or music or philosophy unless he comes to it of his free will.

I could go on with a list of other improvements—about cleanliness and tidiness and the art of cookery and household economy and ventilation and the need for more baths in schools, etc. But I confess that while I make a list of these definite material improvements my heart sinks, because I feel that we may some day get all these and be further off than we are now from the goal of an educated nation. How can I express it? Unless we are better men and women, at least unless we are trying with all our hearts to be better men and women, all these material treasures that we may pile up in our institutions are dross, and we know them to be dross.

## EDUCATION AND BUSINESS.<sup>1</sup>

By W. L. HICHENS.

Chairman of Messrs. Cammell Laird and Co., Ltd.

MY subject is "Education and Business"—a thorny and difficult subject, about which controversy will never cease to rage. It is, moreover, a question of the highest importance, for now, more than ever, do we realise the extent to which our national life is bound up with trade—the close relationship between the State and industry. The war has taught us that the merchant and the manufacturer are vital links in the chain of our national defences, and that their work is just as much national service as the work of the soldier and the sailor. If this is true in wartime, it is equally true in times of peace. For the whole material fabric of our social organisation depends in the last resort on the production and distribution of wealth, and it is vital to the solution of our burning social problems

that commerce and industry should be clearly recognised by those engaged in them as national services, involving large duties and serious responsibilities, not as appanages of the cold-blooded and soulless science of political economy.

You will naturally expect that as a business man I should tell you how the educational system of this country can be better adapted to the needs of industry, and, perhaps, be put on a more practical footing. For this is a time of national heart-searching; we are ready to admit our past shortcomings and to face far-reaching changes. It is the fashion to compare our system of education with that of the Germans, and to draw the conclusion that their system provides a far more useful and practical equipment for those entering the life of commerce.

The cry is, therefore, for a more practical and useful scheme of education, and you will reasonably infer that I shall make suggestions to this end. I have no such suggestions to make, and I fear that at the end of my remarks you may regard what I have put forward as visionary and unbusinesslike.

I want to make it clear at the outset that I cannot claim that my views represent those of the business world. Indeed, I do not know what the views of the business world are, for, as things are constituted to-day, there are no means of ascertaining the collective opinion of the business world on any given subject. You get the views of an individual employer, who may, or may not, be representative of his class, or you may get the views of any one trade on a restricted range of subjects through its trade association; but there is at the present time no organisation representing industry as a whole—no industrial Parliament, where these and similar questions can be discussed, and where the collective opinion of industry can be ascertained. This is a serious defect in organisation, but a digression from my subject which I will not pursue.

I think, perhaps, I can make my point of view clearest if I describe to you briefly the type of recruit that we try to secure in our own business.

A big industrial organisation, such as that with which I am connected, has, or should have, three main subdivisions. There is, first of all, the manufacturing branch—the workshops where the articles are produced; then there is the commercial branch, where the sales are conducted and the accounts and statistics kept; and, lastly, there is the laboratory and research branch—a side of business which has been sadly neglected in this country. So that there are three main types of activity open to young recruits in our business. They

<sup>1</sup> Address delivered to the Incorporated Association of Headmasters at the Guildhall, City of London, on January 9th, 1917.

may elect to take up the practical side of making things, which involves a knowledge of engineering and of the way to handle men; or they may prefer to deal with the distribution of the manufactured article, which offers a wide and varied sphere of activity all over the world; or, if they are scientifically minded, they may find their vocation in the laboratory.

Now what determines us in the choice of our apprentices? I am dealing here, not with the rank and file, but with the better-educated apprentices, who expect to rise to positions of responsibility—those who have had the advantages of a secondary education, although it would be a great mistake to think that the higher posts are open only to those who have had a secondary education. Industry is far more democratic than is generally supposed, and merit is rightly recognised wherever it is found.

I will deal first with our engineering apprentices, whose future lies in the workshops. We prefer that they should come to us at the ages of sixteen and seventeen, and, if possible, after serving an apprenticeship in the shops and drawing-office, that they should then go to a university and take an engineering course. I often wonder why it is that the number of public-school boys who choose engineering as a profession is so small. We live in a mechanical age, and our material progress is more closely bound up with engineering than with any other profession. Are we to harness the great untrained forces of Nature to minister to our needs? It is to the engineer that we look. Do we wish to increase the output of wealth in the world and to raise the general standard of well-being? It is to improved mechanical devices, in the main, that we must look, for it is only by labour-saving machinery that we can gain the freedom from unremitting toil at which modern civilisation aims. And yet one finds that boys prefer the counting-house, or the Army, or the Civil Service. Why is this? Partly, I think, because few scholarships are offered to boys to carry them through their period of apprenticeship, and I would suggest that here is a useful field for the activities of those who interest themselves in educational endowments. But the main reason, I think, is that the engineering career does not offer the same certainty as the others which I have mentioned. These are miserably paid, as a rule, but they offer a safe, though modest, competence, and during recent years boys have been taught to go for the safe thing. And yet there is nothing that saps the moral fibre of any boy—or, indeed, any nation—more effectually than that he should embark on the journey of life with the

motto "Safety first" hung round his neck. But this, again, is a digression.

I return to the recruiting of our apprentices. As in the case of the manufacturing branch, so on the commercial side we prefer that our recruits should come to us at the ages of sixteen and seventeen. We have recently, however, reserved a limited number of vacancies for university men. The research department should also, in the main, be recruited from university men. But there is this difference, that, whereas the latter should have received a scientific training at the university, we require no specialised education in the case of university men joining the commercial side. You may have noticed that we prefer either comparatively young boys of sixteen or seventeen or else young men who have finished their university career, and that there is no great scope for the boy of eighteen or nineteen who has spent two years longer at school. In practice we find that the boy of eighteen or nineteen has not acquired any special advantages by his two extra years at school which enable him to outstrip the boy who has started his business career earlier. I will not pause to inquire into the reason of this, but will merely suggest that the cause may be, not that the education of the older boys ought to be more highly specialised or "vocational," but, on the contrary, that you tend, at these ages, to desert education for practical training, and achieve neither. The fact is that specialised education at school is of no practical value to us. There is ample time, after a boy has started on a business career, in which he can acquire all the technical knowledge that his brain is capable of assimilating, and it is the duty of every firm to see that its apprentices receive a proper training. It is also the duty of every manufacturing town to see that efficient technical schools and continuation classes are maintained.

What we want to assure ourselves when we take a boy is that he has ability and moral strength of character, and I submit that the true function of education is to teach him how to learn and how to live—not how to make a living, which is a very different thing. We are interested naturally to know if a boy has an aptitude for languages or mathematics, or a mechanical turn of mind; but it is immaterial to us whether he has acquired his aptitude, say, for languages through learning Latin and Greek, or French and German. What is vital is that he should have a real understanding of the meaning of words and the framework of speech, for words, as Hobbes has said with great insight, "are the counters of fools, but the money of wise men." They are, in fact, the foundation of sound

thinking and clear writing, whether on a business subject or anything else. What matters in the more advanced study of a language is that a boy should know enough of it to appreciate its beauty and to understand the writings of the great men who have used it, not that he should know enough to write a business letter or interview a customer. The educational value is paramount, the vocational negligible. If, therefore, modern languages are taught because they will be useful in after life, while Latin and Greek are omitted from the curriculum because they have no practical use, although their educational value may be greater, you will be bartering away the boy's rightful heritage of knowledge for a mess of pottage.

Moreover, in considering the question of the best education for the future business man, one must not think only of his life in business. After all, a man's whole life is not spent in the counting-house or the workshop, and even if it were true that education should qualify him in the technique of his future profession, it would surely be no less important to teach him how to use his leisure hours and how to fulfil his duties as a citizen. Will his spare time be spent in idle frivolity? Or will he have some intellectual interests which brighten his life? Will he do his share towards moulding public opinion aright on the political questions of the day? Will his life be well-ordered and based on true knowledge? Or will he fall a prey to what Plato calls "the shapelessness of life"? Will he "hesitate and falter life away—half-living a hundred different lives," as another writer has put it, and cultivate the *πολυπραγμοσύνη* which is Plato's antithesis to a just man's mode of life?

These are the things that really matter for him—and for his country; for it is not Wordsworth's Happy Warrior only

who, when brought

Among the tasks of real life, hath wrought

Upon the plan that pleased his boyish thought.

Good and bad alike build upon the groundwork of their early education, and if the foundations are not well and truly laid in early youth, what hope is there for the superstructure?

How far does modern education teach a boy how to learn and how to live? If he is taught by precept and example that knowledge is not an end in itself, but just the mental equipment necessary to enable him to get rich quick, then his education is doomed to failure, for it is based on error. If he is crammed with dates and lists of kings, if he is taught

How many notes a sackbut has,  
And whether shawms have strings,

in order that he may pass senseless examinations and win a safe competence for life in the Civil Service, his education has been a miserable failure. If, on the other hand, he has learned why this man rose to eminence, why another with great opportunities ended in failure; if he is taught why one State achieved greatness while another declined and fell; if he understands something of the social and moral conditions of other countries and other times—or even if he has only been taught that these are the things to look out for in the reading of history—his education will bear fruit.

I venture to think that the tendency of modern education is often in the wrong direction—that too little attention is given to the foundations which lie buried out of sight below the ground, and too much to a showy superstructure. We pay too much heed to the parents who want an immediate return in kind on their money, and forget that education consists in tilling the ground and sowing the seed—forget, too, that the seed must grow of itself.

There is another aspect of the question which seems to me interesting. No one, I think, can fail to notice the tendency to keep moral education apart from the rest of the curriculum. The former is confined almost entirely to the Sunday sermon in chapel, with possibly an occasional shy reference to the subject during Scripture lessons. The consequence is that a boy's religious life and his ordinary everyday life are in two separate water-tight compartments, and this fatal doubleness of life—this duplicity—pursues him to the end of his days, producing that shapelessness of life which Plato regarded with so much horror. The code of honour that regulates his everyday life is derived, not from religious teaching, but from the cricket-field or the football-ground. Here he learns that he must not play for his own hand, but for the sake of his side, and is taught the meaning of fair-play. By analogy, he grows to understand that he must "play the game" in the affairs of everyday life. But he is not taught that there is a "fair-work" corresponding to a "fair-play"—in fact, there is no such word as "fair-work" in the English language. Games come in for their full share of criticism, and it is right that we should recognise what we owe to them.

This system of water-tight compartments is due, in the main, I think, to the natural reserve of the English character. An Englishman's instinct is to conceal his deeper emotions; he goes through life with a mask on his face, and it is considered bad form, or a sign of weakness, to lift the veil. Perhaps, however, we carry it too far, and perhaps our water-tight compartment system has a heavy responsi-

bility to bear. Perhaps, too, we pay too little attention to what Kant calls "the eternal orientation of morality."

I am well aware that the kind of teaching on which I have tried to lay emphasis calls for the highest type of character in the teachers, and it may be that we are not always successful in attracting the right type of man into the profession. Indeed, it would be surprising if we were, for we do not recognise the importance of the profession as we should. For one thing, assistant-masters are abominably paid. Their average pay is, I believe, less than that of our workmen, and considerably less than that of our skilled mechanics. In fact, it is a sweated trade as much as any in the East End of London, and for the same reason—owing to the working of unrestricted competition. You under-cut one another in your business just as much as we do in ours—only you have no "boom" years in which to adjust the balance; and I suggest that the remedy is the same for both of us—namely, a ring to ensure that the rights of those engaged in the business are recognised, and that the consumer does not benefit unfairly at the expense of the producer. Rings, rightly directed, fulfil an important function in controlling the industry of a country, as do trade-unions; and to harmonise the two is, perhaps, to solve the labour problem. The trouble is that there is a tendency for both types of organisation to abuse their strength, while the State, which should hold the balance between them, shows too little understanding of its proper function.

If it is argued that the greater cost due to bigger salaries will put higher education beyond the reach of many, and that we shall discourage the very thing we want to promote, my answer is that we have no right to achieve this end at the expense of the teachers, and that other means must be found to overcome the difficulty—more generous benefactions, or, if necessary, State aid for scholarships. One thing is certain: we can never expect men to maintain their self-respect and to give us their best so long as we persistently underrate their value.

It will be a lamentable thing for the country if its higher education is sterilised because the best type of man does not join the teaching profession. And I believe that after the war there will be a serious risk of this happening unless the problem is courageously tackled. For never has true education been more urgently needed than it is now, when we are face to face with the tremendous problems that war has brought in its train. Great forces have been let loose, and will not settle to rest again in the old familiar grooves. The transition from the

old order to the new will take many years, and the foundations of human character which it is your task to see well and truly laid will be severely shaken.

A want of education, or—worse still—a misguided education, lies at the root of most of our troubles. Strong pressure is being brought to bear to commercialise our education, to make it a paying proposition, to make it subservient to the God of Wealth, and thus to convert us into a money-making mob. Ruskin has said that "no nation can last that has made a mob of itself. Above all, a nation cannot last as a money-making mob. It cannot with impunity—it cannot with existence—go on despising literature, despising science, despising art, despising Nature, despising compassion, and concentrating its soul on pence."

On which side are the forces of education to be found? Or are they on the fence?

#### OUT-OF-SCHOOL JURISDICTION OF HEADMASTERS.

By C. W. KAYE, M.A.

Headmaster of Bedford Modern School; Headmaster-elect of St. Bees School, Cumberland.

THE problem of the out-of-school jurisdiction of headmasters is one of growing importance. In the past it has no doubt sometimes involved difficulties in isolated cases, but in the present day the marked impatience of discipline and control on one hand, and on the other the development of large schools, both secondary and elementary, tend to increase greatly the difficulties inherent in the subject. "The generation of our fathers never saw light," and was content with benighted elemental ideas of control and discipline both parental and scholastic, not complicated by the problems created for us by trains and bicycles and motors and cinematographs, so that while their difficulties were fewer the solution of them was simpler, and headmasters had not to fear appeals to the police-courts against infliction on their boys of the demoralising and inhuman punishment of the stick.

We are told nowadays that corporal punishment is one of the few privileges left to the upper classes, and it seems to be one, if not the only one, for participation in which no agitation has at present been started among the less favoured; but in secondary schools of all classes, except a few privileged centres of sweetness and light, where corporal punishment is unknown, the stick is still the *ultima ratio* in the exercise of the headmaster's jurisdiction. To those of us headmasters of day-schools who were brought up in the public schools (if one may venture to use this indefi-

nite term), the fact that there were limits to the out-of-school jurisdiction of headmasters had (when we discovered it) the charm of novelty, and we have had to experiment on it according to our natures. In a boarding-school no question arose: the only limit of the headmaster's jurisdiction was the train which took his boys away at the end of term, and one has rarely heard of any parent, never of any boy, bold enough to challenge it; but in the case of day-schools it is altogether different.

The legal position of a headmaster with regard to his pupils out of school hours and off the school premises is one on which the writer is not able to express an opinion, but more than twenty years' experience as a headmaster has convinced him that in this matter, as in most others, the old proverb holds good: "One man may steal the horse, and another may not look over the hedge." The headmaster really makes his own position in the matter, and if he is reasonable and just and firm (qualities not always found even in headmasters!), he is not likely to experience very much trouble, for the old dictum, "You will find your parents never reasonable," is in the writer's experience absolutely false. Unreasonable parents are few and far between, and with scarcely an exception even the most unreasonable can be brought to reason by reasonable treatment.

The need for the exercise of a headmaster's authority in out-of-school matters generally arises in connection with absence from school without permission, or smoking or misconduct on the railways on the part of "train boys." The headmaster in an elementary school is as a rule a Gallio in these matters, and "cares for none of these things," owing, no doubt, to the legal difficulties rather than to any indifference in the matter; but here, as in the secondary schools, much depends on the individual, and the most forceful headmaster of an elementary school whom the writer has known, a man of real character and much vigour, would assert himself in such matters in a way which would have made more timid men fearful of the consequences. In days when the teachers have to combine for the protection of their interests and themselves, and to support a regular legal department to undertake their defence in police-courts, to which they are liable to be summoned even for enforcing discipline in school hours, it is natural that the head teachers should shrink from undertaking the responsibility of the discipline of their children out of school.

In the case of Bedford, which has a larger percentage of children in secondary schools

than any other place in the country, and in which, therefore, as the pupils are mainly day pupils and not boarders, the question of the jurisdiction of a headmaster out of school is of the greatest importance, the scheme governing the Harpur Trust lays down that "the headmaster shall, subject to such regulations as may be made by the governors, have authority over all scholars [of his school] both in and out of school during the school terms," but whether this is common form or not the writer does not know. It clearly gives the widest possible jurisdiction to the headmaster, limited only by such restrictions (if any) as the governing body may impose; but, like all such legal rights, it is liable to be tested in the courts by any parent who feels aggrieved, and the mere legal right would be quite useless unless it were backed up by the confidence and consent of the general body of parents. The parent has, in the case of children attending secondary schools, the powerful protection afforded by the fact that he is not bound to send them to any particular school, as is the case for parents of children attending elementary schools, and as a school without scholars is, in these bad days of capitation fees, of little value, any action of a headmaster which is likely to empty his school is in the nature of things improbable.

The conclusion to be drawn from these reflections is obvious—that the real basis of our jurisdiction is moral and not legal, and that it rests with the headmaster to set the standard and to keep his boys up to it. The task must be much more difficult in new schools of the type of municipal or county council secondary schools than in older schools in which custom and tradition are firmly established, though custom sometimes brings its own difficulties. Arnold's difficulty at Rugby in dealing with the bad old custom of Rugby boys drawing the linchpins of the farmers' carts is recorded in the pages of "Tom Brown's School-days," while Bradley's difficulties in dealing with the out-of-school amusements of Marlborough boys in Savernake Forest are known to some of us; but where custom and tradition are sound, they are invaluable, and make discipline carry itself out automatically. The lack of them must be very seriously felt by headmasters who are themselves accustomed to the discipline of schools with traditions, when they undertake the control of new institutions peopled with pupils who, excellent and tractable as they usually are in all ways, have yet been from the traditional school point of view "without the law." For headmasters in such a position the obvious motto is:

*Festina lente*, and build up your own traditions without rest, but without haste; like Telemachus,

discerning to fulfil

This labour, by slow prudence to make mild  
A rugged people, and thro' soft degrees  
Subdue them to the useful and the good.

The questions referred to earlier in the article are not difficult if wisely handled. Few parents object to reasonable punishment of their boys for undoubted misbehaviour in public, and not many will allow their boys unauthorised absence from school a second time, if it is once pointed out to them that in common justice all boys in a school are entitled to the same privileges and the same treatment, and that if one boy is to be absent for purposes of amusement or because his services are useful at home, all boys must be excused in similar circumstances, and that then school organisation and work would become most difficult.

## SCIENCE FOR THE RANK AND FILE.<sup>1</sup>

By Prof. R. A. GREGORY.

IN the teaching of science it is necessary to distinguish clearly between courses of work suitable for the rank and file, and those intended as preliminary training for scientific or industrial careers. In one case we are concerned with science as an essential element of a liberal education, and in the other with vocational instruction. Because the distinction between these two types has not been understood, school science has frequently been regarded as premature specialisation, suitable possibly for a select few, but not for the average boy, whose mind from an early age is often occupied mainly with the languages and literature of ancient Greece and Rome. We need not discuss now whether these classical studies represent specialisation of another kind; for recent events have shown that promoters of literary studies are prepared to take a broader view of the curriculum than was formerly the case, and we seem to be within sight of an understanding which will satisfy both educational and national needs.

In August last a conference representative of the Classical, English, Geographical, Historical, and Modern Language Associations adopted a series of resolutions, the first two of which were as follows:—(1) It is essential that any reorganisation of our educational system should make adequate provision for both humanistic and scientific studies. (2) Premature specialisation on any one particular

group of studies, whether humanistic or scientific, to the exclusion of all others, is a serious danger, not only to education generally, but to the studies concerned. These principles have since been accepted by the Council for Humanistic Studies, into which the Conference of the Five Associations has been merged. They are also embodied in the three following resolutions adopted by the Headmasters' Conference at the recent meeting at Rugby:—(1) That it is essential to a boy's general education that he should have some knowledge of the natural laws underlying the phenomena of daily life, and some training in their experimental investigation. (2) That in the opinion of this Conference this can best be ensured by giving to all boys adequate courses of generalised science work, which would normally be completed for the ordinary boy at the age of sixteen. (3) That, after this stage, boys who require it should take up science work of a more specialised type, while the others should for some time continue to do some science work of a more general character.

The claim that the natural sciences should be integrally and adequately represented in the educational courses of all boys up to about the age of sixteen has also been accepted by a joint conference of Lord Bryce's Council for Humanistic Studies and Sir Ray Lankester's Committee on the Neglect of Science, while a further proposal that this group of subjects, with physical geography, should be given one-quarter of the school periods in a pre-specialisation school course is under consideration by the constituent associations. We ought, therefore, to be able to take it for granted that in the future every boy in a public school will be required to undertake experimental work and be made acquainted with science. The result should be what Lord Sydenham, who was trained on classical lines, asked for recently, namely, "much more scientific knowledge in every branch of our national life and a greater diffusion of scientific habits of thought among all classes."

It is, of course, a mistake to regard science and what are now called the humanities as opposing elements in education. The two terms should, indeed, be considered as synonymous; for science rightly conceived is modern humanism in the fullest sense. Even if the humanities are understood to mean letters, history, and art, there should be no conflict between these studies and the pursuit of natural knowledge, which is perhaps a better term to use than "science" to express the subjects with which we are particularly concerned. What should be looked forward to was said in the House of Lords a few months ago to be "the teaching of science in a human

<sup>1</sup> Paper to open a discussion at the Eton meeting of the Association of Public School Science Masters on January 3rd, 1917.

spirit and the teaching of the humanities in something of a scientific spirit."

There could not be, therefore, a more appropriate time than now for the consideration of schemes of scientific instruction suitable for the education of the rank and file up to the age of about sixteen years, when specialisation may be permitted; and in such courses the human side of science should be prominent. It may be doubted, however, whether the methods now followed in the teaching of scientific subjects in schools are so effective in creating or fostering interest in the natural world as those formerly adopted. Twenty years ago or so, much more attention was given to the attractive side of science than is now the case. Pupils were shown interesting experiments or were encouraged to read about remarkable facts and phenomena in Nature; and if they took a practical course they were able to cover a fairly wide field. In physics, for example, a student could learn something about the whole elementary range—mechanics, heat, sound, light, electricity, and magnetism; in chemistry he would see many striking changes and effects, such as impress themselves upon the youthful mind; in natural history he would read many wonderful facts about birds and beasts and other objects—animate and inanimate—in the world of Nature.

No comprehensive survey of this kind is possible under existing conditions of science teaching in schools. In physics few students get much beyond a course of work in mechanics and heat, and they leave school without receiving any instruction in other branches of the subject; their practical chemistry is frequently limited to manipulations and a study of air and water; and work in Nature-study means mainly the observation of a few facts of plant physiology or of animal development and habits.

Personal observation, intelligent inquiry, quantitative test, are, of course, essential factors of scientific method, but to insist upon all school science being controlled by them is a mistake. Little justification can be found for the concentrated attention given to a few subjects, with the view of imparting knowledge of experimental methods, when such a course means that the wonders of the fields beyond are kept outside the range of vision.

School science as at present taught, and as defined by examination syllabuses, seems to proceed on the assumption that every pupil is to become a physicist, chemist, engineer, or an original investigator. The practical work now done is certainly more valuable as a means of scientific training than it used to be, but it may be doubted whether by such exercises alone science can claim a large part of a

general curriculum. Modern life requires that the elements of scientific method and knowledge should be included in every educational course. School work should not, however, be concerned with the training of experts in science, any more than of specialists in classics, but with the imparting of the rudiments of a liberal education to all pupils, so as to awaken interest which will continue when schooldays are over.

There are reasons for believing that the descriptive and qualitative school science of a generation or two ago was better adapted to promote such continued attention than is the quantitative work in the narrow fields mapped out for instruction to-day. In their anxiety to impress pupils with a sense of scientific accuracy and cautious conclusion, advocates of the methods now in vogue have forgotten that it is even more important to present a view of science which shall be human as well as precise. To the general neglect of this aspect of scientific study, which appeals to all, must be ascribed the fact that science has lost much of its former popularity, and has become a task in which only a favoured few can hope to excel.

It is a thousand pities that science should be considered to be merely a burden of material fact and precise principle which needs a special type of mind to bear it. We want much more of the spirit, and less of the valley of dry bones, if science is to be made of living interest, either during school life or afterwards. We want everyone to know something of the lives and work of such men as Galileo and Newton, Pasteur and Lister, Faraday and Kelvin, Darwin and Mendel, and many other pioneers of science. The way to inspire wide interest in the achievements of men like these is not that of the text-book and the laboratory manual, but by first-rate scientific literature of a much broader scope. In such books information should be made subordinate to inspiration, and broad outlines of great discoveries or fruitful ideas should be presented instead of tedious details. There are plenty of themes for epics which, rightly used, will stimulate interest in science even among boys to whom practical operations make little appeal; and when the reading of books recording them in good literary style forms part of every school course, much will have been done to promote intelligent appreciation of scientific work.

Let it not be supposed for a moment that the suggestions here made for comprehensive teaching in science disregard the necessity for individual observation and experiment. What is urged is that the outlook upon the realm of natural knowledge should be much more extensive than can possibly be surveyed in the laboratory. The purpose of observational and

experimental work is to encourage the natural spirit of inquiry, and thus to create a perception of the process by which new scientific knowledge is gained. Success in this work is not to be measured by the amount of information acquired, but by the training afforded in the experimental method of inquiry, the power to apply it to the solution of a practical problem, and the ability to describe the results obtained. There can be no satisfactory science teaching without this training in observation, experiment, and description, but it must not be assumed that it appeals to the minds of all boys, any more than does Greek syntax or the construction of Latin verse. For the rank and file, who will not in most cases proceed to scientific or industrial careers, something more is needed than laboratory training in scientific method, and it can be found in descriptive lessons and reading on everyday applications of scientific discovery, such as are exemplified in industrial history, on the establishment of great principles, and on many interesting aspects presented by the broad field of natural fact and phenomenon.

One result of concentrating attention upon experimental method in recent years is that the questions set in many public examinations aim at testing practical knowledge only and afford no opportunity of obtaining credit for acquaintance with the history of science or interest in Nature as a whole—earth, sea, and sky, "and all that in them is." No one would, of course, wish to make it possible for a candidate to gain marks for information obtained by reading about an experiment which he ought to have done practically, but we plead that something more than familiarity with practical effects is needed if science is to justify a prominent place in the general education of all. There must be much more of the human touch in the teaching, so that pupils may be encouraged to take intelligent interest in the wonderful world on which they live and appreciate the patient and earnest endeavours of men of science to understand it. Assuming that a boy is receiving adequate training in scientific observation and experiment, he is in a position to be impressed and inspired by examples of the application of this method. He can admire the minute attention to detail which led to the discovery of argon and the isolation of radium, or be interested in the marvellous life-history and domestic economy of the honey-bee. He may learn of Fabre's studies of insect life, and of the part played by insects in the transmission of disease, of the discovery of the male and female elements of plants, of early man and his flint implements, and of the many ways in which scientific research has contributed to the nation's material

strength and prosperity. He can be carried by such descriptive lessons to the higher planes of human thought and spirit, where men stretch out their hands towards the stars shining in their hundreds of millions upon the dark canopy of infinite space and existing also in countless numbers as dark globes which can be perceived by their gravitational influence, but never come within the range of vision of any telescope.

It is obviously impossible to bring the wide range of subjects here contemplated within the limits of a practical course; and the problem is to determine how best to impart these broad views of fact and principle so that they shall have a truly educational influence. Such descriptive lessons will need to be different in both aim and scope from work in the laboratory, where the point of view is that of method rather than of a store of fact. Appropriate correlation should be possible through history and English, on one side as showing how modern civilisation makes use of science and invention in the arts both of peace and war, and on the other in the use of good scientific books as English texts and of scientific subjects for English composition. At present there are not many readable books suitable for this purpose, but when schools demand literature of this kind, it will probably be forthcoming in sufficient measure.

It would be presumption for me to put before such an assembly of practical teachers of science as this a detailed scheme of work which would embody the foregoing principles. There is general consent for the view that before experimental inquiry in the laboratory is begun, all pupils should be given a course of Nature knowledge in its widest sense. In addition to the observational work that can be started successfully at this stage, a course of practical measurements illustrating the mathematical teaching is best undertaken at the same time. Systematic attention to the method of experimental inquiry will follow these courses and should be accompanied by studies of works by pioneers of science showing the main roads along which natural knowledge has advanced. It is most desirable, from the point of view of the education of the rank and file, to introduce such descriptive lessons and reading intended to stimulate interest in scientific work and achievement and their relation to modern life, instead of limiting the teaching to dehumanised material of physics and chemistry which often leaves little impression upon the minds of boys, and the chief purpose of which is to prepare for examinations. If teachers of science are given the freedom to fill in these outlines, the instruction will afford a training in the method of observation and

experimental inquiry, in the understanding of the general vocabulary of science, without which no one in these days can presume to be liberally educated, and in clear thinking as well as the correct expression of thought. When this is done science will not be placed outside the circle of so-called humanistic studies, but will justify itself as the most humanising of all the groups in the school curriculum.

### RETROSPECT AND FORECAST.<sup>1</sup>

By W. H. D. ROUSE, M.A., Litt.D.  
Headmaster, Perse School, Cambridge.

**W**HEN everyone is clamouring for educational reform, it is a fit and proper time to take stock of the past and to look forward into the future, especially as our work in the present is interrupted and made ever more difficult by the war. We represent, indeed, only a small section of teachers; but part of our duty has been to consider the proper place of Latin in school work, and no one can truthfully accuse us of desiring to push our own pet subject at the cost of others. So far from that, we have voluntarily relinquished all claim to an excessive allowance of time; we ask only what is agreed to be the minimum necessary to the proper study of any foreign language, and we hold that we have shown how with this minimum better work can be done than is usually done with the maximum. That is a paradox over which those to whom we appeal have stumbled; but it is a question of fact.

In our retrospect the most striking thing, and the most disappointing, is the complete failure of our appeal to the leaders of the teaching profession. It is now fully ten years since our voices began to be gently audible, and six years since the first collection of evidence was published; it is five years since our Reform School met at Bangor, and three meetings of that school were held before war made us also silent. Every means within our limited power has been taken to ask those in authority to investigate the question, but in vain. The Board of Education is not included in this statement; it has helped materially, and without it far less could have been done; but I refer to the members of the various associations of headmasters, and to the Universities of Oxford and Cambridge. It has been pointed out that the whole study of classics was in danger; that excessive claims to time could not be long upheld; that, as a matter of fact, they were unnecessary; and that we must set our house in order ourselves, or it would

shortly be brought down about our ears. A reform might have been carried out in the time; but our appeal has fallen on deaf ears, and not a single one of those in high places, whether in school or university, has even taken the trouble to investigate the facts. A few have allowed themselves to be drawn into controversy without having investigated the facts, and, one and all, they have been invited to investigate the facts: not a soul would do it. They believe, no doubt, that their position is secure; it is not, as time will show; but even if they believed that, we expected that they would hear our appeal in defence of their less fortunate colleagues.

It is true that assistant-masters and assistant-mistresses have responded freely. Some hundreds have attended the Reform School, and others have taken what opportunities they could. The same may be said of some few headmasters and head-mistresses. But our body could not do the work which was desired: we could not carry out a formal investigation and act upon its issue so as to affect the general education of the country. Only those in high authority could do that; and they have chosen to take up the position, either that things are right as they are, or, if not, that the subject is to blame. Hence powerful bodies at Oxford and Cambridge are fighting hard for the abolition of compulsory Greek, because they say it is not a fit subject for any but a few boys of specially literary tastes. Precisely the same arguments apply to Latin as to Greek. Latin is kept in the schools now by the rules of the Board of Education—that is, by compulsion; and there is no doubt that when Greek is disposed of, the same agitation will be applied to Latin. In Scotland, Greek ceased to be compulsory for the universities, and in ten years it disappeared from all schools except three or four. In the United States, the same cause was followed by the same result, and the Americans are now fighting to keep a shadow of Greek in the universities. There its disappearance has been followed by an agitation against Latin, which has already had some success. These facts point to what is before us. Our only hope is that the new Minister of Education, the first Minister who ever knew anything at all about education, may save classical study by the same means that has saved it in Germany, by making it compulsory in schools for those who are to enter certain professions.

In the United States, where the dangers of the position are more distinctly felt, reformed methods are making progress. It is true the citizens of the Republic are always ready to try anything new, and a little apt to drop it

<sup>1</sup> An address delivered to the Association for the Reform of Latin Teaching on January 5th, 1917.

too soon; but that seems not to be the case with Latin reform. It was applied seriously by the staff of the Jamaica High School, the chief secondary school of New York City, and I have lately received a report of its effect on the 400 boys who learn Latin in that school. Four years' experience was behind that report. Of course, four years is not enough to carry the reform through. If this reform be combined, as it should be, with a reformed curriculum, in which the subjects are reasonably arranged and the work adapted to the pupils' ages, it will take ten years to complete, and fifteen to see something of its after results. American schools are less thorough, and their results correspondingly less satisfactory; but even for America the teachers recognise that four years cannot give material for a verdict. They are also hindered by their pedantic examinations, which apparently make it impossible to apply common sense fully to school work. However, the experiment in New York has satisfied its authors that they are in the right path, and they intend to go on. As I understand the statistics, the writers were guided by a comparison of examination results with those of past years. For us, that is only a partial test: it is the spirit of the pupil, the change from boredom and hostility to life and goodwill—this it is that we prize as the chief result of a common-sense method. To pass an examination may be a useful thing, but that comes of course, and it may come even to the badly taught.

Our part, for the present, is to keep the torch burning while the war goes on. We are not so many as we were. Some of us are in the Army: Capt. Paine has given his life for his country, and lies now in classic soil; we shall not look upon his like again.

If we pass from our own subject to take a wider view of what may happen, it is impossible not to be anxious. Committees are sitting to inquire into this subject or that; there are violent outcries of scientific men and of business men, who seem full of contempt for everything except chemistry. Even Sir John Jellicoe has allowed himself to be enticed into this ill-advised company. Nowhere do we see any idea that education and instruction are different things; no one seems to know what can be done in schools and what cannot; the whole nation is apparently possessed with the belief that salvation lies in aniline dyes. How to make more money is the thought in most men's minds. No one remembers that the one essential thing is to get good teachers, and that to get them in any number is impossible unless they are well paid. Those good teachers who

are now at work—and there are more of them than the country has deserved—work for the public benefit at the cost of their own prospects, often to their own impoverishment, and they receive no thanks from anyone except their pupils. Committees may be good things, but they are not what the times are in need of; they could not settle the question of education, no matter what evidence may be put before them, although they can both help and hinder. Let ample and generous support be given to any and all who may have shown themselves worthy of trust, and the problem will solve itself. There is no other way, since the public cares nothing, and our schools are under the thumb of the ignorant and often malignant, whose one idea is to cut down the rates. Is there someone, whose voice will be listened to, who will tell this to the politicians at Westminster?

#### PERSONAL PARAGRAPHS.

JANUARY, as usual, brought with it a very large number of papers and speeches by educationists. The feature noticeable in October was again evident in January: most of the teachers taking part have long been before the educational public. At the conference held at London University, Prof. Gilbert Murray spoke with his usual charm, Prof. Adams expressed educational truths in his well-known humorous vein, and Mr. Nowell Smith, one of the most progressive of the headmasters of the public schools, took part in the meeting of the Education Reform Council.

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MR. F. A. SIBLY again delivered, with his usual fluency, the presidential address of the Private Schools Association, and Prof. Rippmann again advanced the cause of simplified spelling. The ranks of schoolmasters are much the poorer by the retirement of Dr. Lyttelton, who took the chair at the annual general meeting of the Dalcroze Society.

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MR. SOMERVILLE, who completed his third year of office as chairman of the Assistant-masters' Association, has proved himself such a thorough worker in the cause of education that it would be a great advantage to schoolmasters and to education if he could be induced to continue his work in another place. Surely a seat could be found for so convincing a speaker and so attractive a personality.

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MR. SOMERVILLE is to be succeeded as chairman of the A.M.A. by Mr. H. P. Lunn,

who is science master at Holloway County Secondary School. Mr. Lunn has had a variety of experience as a schoolmaster, has been a hard-working member of various committees of the association for some years past, and is just the type of man that the association requires at the present time. He is clear-sighted and cautious, and will maintain the good relations that his predecessor has established with the various educational bodies.

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THE A.M.A. has just lost the services of Mr. F. W. Payne, of the City of London School, as hon. sec. of the legal sub-committee. Mr. Payne has for the past ten years made its province peculiarly his own, and has ordered its procedure so wisely that the legal side of the association's work has been extraordinarily successful. He brought to the secretaryship tact, acumen, a sense of humour, legal knowledge, and unusual business ability.

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THE death of Dr. S. S. F. Fletcher, lecturer in education and vice-principal of the Cambridge University Day Training College, has taken away one who can ill be spared at such a time as this. He was educated in German and American schools, and he graduated at the Universities of London and Jena. This unusually wide experience of education combined with his kindly and sympathetic nature to make him the ideal head of a training college. At Cambridge he was responsible for the work of both elementary- and secondary-school masters. Sixteen years of strenuous work had brought no small measure of success to both departments. He was able to give his students something of his own zeal for the scientific study of education, and no one who worked under him could fail to learn that the profession of a teacher was not a mean thing, but a noble calling, only to be entered on by those who had carefully prepared themselves. The war led to the closing of the training college. Dr. Fletcher intended to devote his enforced leisure to preparing a history of English education in the nineteenth century, but his illness, which began in September, 1915, left him no strength for this work. He was able to see published the first volumes of a series on modern methods of teaching which he was editing for the Cambridge University Press, a series by which he hoped to attract attention to the best methods of teaching various subjects. As a member of the Cambridge Borough Education Committee he did much to help elementary education in Cambridge, and as an examiner and inspector of schools he brought to many new ideas and new energy.

MISS MARGARET JENKINS died at Merthyr Tydfil on December 16th, at the advanced age of seventy-three. A pupil teacher and afterwards mistress of the Commin Girls' School at Aberdare, she was appointed headmistress of the Girls' School at Merthyr Tydfil in 1868. She remained in office for forty-two years, retiring only in 1910.

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THE REV. ARTHUR CARR, until lately Vicar of Addington, died in his eightieth year on December 28th. After a distinguished university career, he became a master at Wellington College, under the rule of Dr. Benson. Mr. Carr spent the best years of his life—from 1860 to 1882—at Wellington. He was a sound scholar, had the great gift of friendship, and was beloved by all who knew him.

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THE REV. S. W. SKEFFINGTON, formerly a master at Charterhouse, died on January 9th, at the age of seventy-nine.

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THE REV. W. C. STOCKS, formerly a master at St. Edward's School, Oxford, met with a fatal accident at Nottingham on December 11th last.

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AMONG the schoolmasters recently killed on active service are Capt. G. H. Sullivan, science master at Sedbergh; Capt. T. I. W. Wilson, formerly at St. Paul's, and latterly at Repton; 2nd Lieut. W. Balshaw, of Fareham School, Hants; and 2nd Lieut. the Rev. A. Baldry, of Pilgrims' School, Westerham. Of Capt. Sullivan his superior officer writes:—"He was always ready to do anything that came to his turn, and often did a great deal more than he need have done. His men were devoted to him, and he was a great leader."

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MR. A. S. CHURCHILL, of the Oxford and Cambridge Club, has bequeathed £50,000 to Harrow School for two scholarships, one on the classical and the other on the modern side. In the election "regard is to be paid to literary and scholastic attainments, fondness and success in manly outdoor sports, qualities of manliness, courage, truthfulness, devotion to duty, sympathy with and readiness to protect the weak, kindness, unselfishness, and love of comrades; exhibition during schooldays of force of character and of instincts leading to the exercise of good and kindly influence over schoolfellows." The residue of the property—at least another £50,000—is also left for the benefit of Harrow School in such a manner as the governors, with the approval of the headmaster, shall direct.

THE governors of the Harpur Trust at Bedford have appointed Mr. A. C. Powell, headmaster of Skipton Grammar School, to be headmaster of the Bedford Modern School. Mr. Powell was educated at St. Olave's School, Southwark, and Trinity College, Cambridge. After holding masterships at Gresham's School, Holt, King's School, Grantham, and Sedbergh, he was appointed to Skipton in 1911.

ONLOOKER.

### HENRY WHITEHEAD MOSS.

THE death of Henry Whitehead Moss seems to mark the close of a distinct era in public-school education. Butler, Kennedy, and Moss—a notable triumvirate—ruled Shrewsbury for the long space of 110 years, and it was they who, in spite of its small numbers, scant endowment, and meagre accommodation, made it into a great school. And how? Assuredly because they were all great teachers. A boy of parts who went to Shrewsbury and got into the Sixth could scarcely fail to become a scholar. To make scholars, to penetrate a boy's mind with the love of classical learning, was the headmaster's supreme task, and because he did it with his might, because he put his whole heart and soul into it, results were achieved which have, perhaps, never been equalled.

Nor was the training, as it might seem, a narrow one. To get a real grip of the great classical writers, to have an intimate familiarity with them, to hear and understand their living speech—this is something surely which well serves to expand rather than contract the mind. It does, indeed, leave some important faculties undeveloped, but it at least affords room for large growth, and in any case that the best and ablest boys in a school should come under the direct influence and immediate teaching of a distinguished headmaster is in itself a thing invaluable. To-day, no doubt, it is coming to be held that the chief business of a head is not to teach, but to "organise"; yet although, with the increasing size of schools and the increasing complexity of curricula, general administrative work may take up more of a headmaster's time, and it may no longer be possible to bring together, as was the case at Shrewsbury, all the ablest boys into a single Form that pursued a single study, none the less, while it remains the chief business of a schoolmaster to teach, it must always remain a paradox to maintain that the energies of a headmaster should be almost wholly directed to something else. Organisation is indeed necessary, but to set it in the highest place is a topsy-turvy method which inverts true values. For teaching is not, as it were, a

builder's job, where the architect counts for much and the workman for little, but a matter of finest artistry in which the craftsman's skill, and not the wit of whoever sets him to work, is the only thing which is really creative and therefore valuable.

To speak, indeed, of a man like Kennedy as an "organiser" would be at once an insult to his genius and an outrage upon truth. As a classical teacher he stands out alone among the men of his generation; but of method or system no man ever had less. He set himself, as his nature impelled him, to do one thing well, and he did it. Nor at first was it much otherwise with his successor. The very antithesis of Kennedy in some ways—the one all fire and impetuosity, the other cold and almost frigid in outward bearing—he came to Shrewsbury a young man of twenty-five who had lived hitherto all but wholly among books, who knew very little about boys, and had but scant acquaintance with the outer world. At first sight it might seem that he must have failed, and, perhaps, he would have done so had it not been for two things, one of which was his own worth and the other the quality of the Sixth Form with which he had to deal. It was largely composed of boys of more than ordinary abilities, and once they gave their confidence to the new headmaster his position was secure. No one at Shrewsbury in those days dare much criticise or much murmur where the Sixth Form approved, and the verdict of the Sixth Form on Moss was quickly and decisively given. They spoke evil of him, of course, at times; they compared him to his detriment with "the Old Crow," as Kennedy was called; they eagerly read compositions in which his foibles were described in Greek that Plato might have acknowledged; but they saw also very clearly that here was a man whose learning and whose zeal for learning alike commanded respect. No man of second-rate parts could have ruled such a Form; they had been accustomed to greatness, to being taught "with authority," and a mediocre man would have roused only a fatal contempt. But there was nothing mediocre about Moss. His ways might not be altogether their ways, but, if not amongst the most brilliant, he was certainly among the soundest scholars of his time, and he was, above all, one of the most honest and hard-working of men. No one but a few can now know how hard he worked. A headmaster nowadays who looks over his own exercises is almost a prodigy—a "mere teacher" can do that—but Moss went through the whole of the exercises of a large Sixth not only with laborious patience, but almost with enthusiasm. He never flagged; he never spared himself; he made no parade; but he

shirked nothing. The school found that it had a master who was worthy of it, capable and eager, as few men could have been, to maintain the high traditions of its past.

But those early days of his headmastership—for him, perhaps, his happiest days—could not last. Even when he came to Shrewsbury the conditions of public-school life were wholly altering; and the situation at Shrewsbury was becoming yearly more difficult. Not only was the accommodation in the boarding-houses the worst in England, but the supply of clever boys who used to come to it from local grammar schools was being continually drained away by schools which could hold out the attraction of rich scholarships. The school, thanks to its headmasters, had, no doubt, in the past done wonders, but beyond classical learning it had nothing to offer—no large bounties, no social prestige, no luxury, and no adaptability to modern demands. As a great school its days seemed numbered, and then Moss showed that a student and a scholar need not be incapable of affairs because he is generally indifferent to them. He saw that the school must either be moved or perish. He knew all the difficulties, but he faced and overcame them. Not as in the parallel case of Charterhouse, with large resources to rely on, but with the scantiest of means, with many local prejudices and jealousies to surmount, he made Shrewsbury, as it were, a new school. Largely through his energy and wisdom (and also by his unstinted personal generosity) it now occupies a site, looking down on the Severn and the spires of Shrewsbury on one side, and on the other facing the Welsh hills, which is of almost unrivalled beauty; its numbers have more than doubled; and its buildings, though they cannot vie with those of wealthier foundations, may well, to those who remember the old school, seem almost palatial. It is not, perhaps, the old Shrewsbury; it may no longer be, as it once was, the nursing-mother of a long family of scholars; no second chaplet of verse such as the *Sabrinae Corolla* will, it may be, ever again rival Milton's tribute to the Severn's stream; but it is a Shrewsbury that has before it a new life and larger opportunities than before; and that this is so is, above all, due to the ability and the self-sacrifice of its second founder. Himself wholly a classical scholar, he had the large heart and understanding to see and feel that to-day other things also are needed. He might well have been content, so far as his own tastes went, to sit where Butler and Kennedy sat in the old "Top Schools," and to teach as they taught; but he set the welfare of the school before his own personal inclinations. He loved old ways and old traditions; he was by nature a school-

master of a bygone type, but when it came, as it were, to a parting of the ways, when duty pointed out to him a new path, he set towards it a forward face with strong and unwavering resolution.

And it should be added that, as in public life he showed himself a great man, so, to those who knew him, he was always among the most lovable. His acts of kindness were beyond count. Whoever asked of him, no matter what the nature of the request, ever got the utmost he could give, and hundreds of his pupils, who may only have half understood him as boys, have learned in later life to realise the worth and steadfastness of his friendship, the strength and vigour of his intellectual grasp of large issues, and also to feel that genial warmth which made him, in lighter hours, the most companionable and entertaining of headmasters.

T. E. P.

#### LITERATURE AND SCIENCE IN EDUCATION.<sup>1</sup>

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PERSONALLY, I believe that the aim of education is primarily the training of character, and in this respect I believe that we may be said to have succeeded far beyond reasonable expectation or unreasonable hope; and whatever we do to alter our education we must contrive to keep that ethical element. Intellectually, we have not done so well. We have not succeeded in kindling intellectual interest, and I further believe that we have not made the most of our resources of definite technical ability. The framework of a system is all there, but we have not taught the right things, or we have not taught them in the right way; we have not sufficiently developed individual capacity; and I believe that the reason why we have not succeeded here is that we have not sufficiently recognised the differences of temperament and taste. We have compromised, because we have begun with the notion that it is possible to find a type of education which is applicable to all alike, and what we have called a sound general education has not been a sound one at all, and only general in the sense that it suited no one in particular. It is just as if we had invented a sound general diet by trying to cater for all digestions and appetites, man, woman, and child, alike, without recognising the vast differences in human nature and the nuances of human inclination.

Every practical educator knows that one can divide one's material into three rough classes. At the top come the people, not very numerous, of strongly marked individual capacity and ability. These can often deal fairly successfully with a variety of subjects, but there is generally one subject in which they are obviously and specially proficient. I will take the third class next, and these are the people who are clearly slow and dull, and find great difficulty in apply-

<sup>1</sup> Reprinted with permission from a paper read to the Royal Society of Arts on December 20th, and published in full in the Journal of the Society, December 22nd, 1916.

ing themselves intelligently to any subject at all. Then there is a much larger second class of fair, straightforward capacity, not markedly good at any one subject, and yet not markedly feeble; and it is these who are the chief problem. The first class need careful special training; the third class are probably not adapted for an intellectual education at all. The second class are really the difficulty.

The new scheme of the Board of Education is probably the best attempt which has yet been made to deal with the situation. It amounts to this: that up to the age of sixteen or thereabouts boys should be taught the things which no one can well dispense with—English, a foreign language, elementary mathematics, elementary science, history, geography, Scripture, and, if possible, a handicraft of some sort. By the age of sixteen it is generally possible to discern an aptitude of a definite kind. After that age, then, a boy should be enabled to give a little more time to his particular aptitude, not simply specialising, but providing a sensible balance. Then, it may be hoped, the universities will be more elastic in giving to all boys who are capable of profiting by higher courses of study at all a chance of pursuing a special subject. Thus, it is suggested, we might turn out men who really had a subject, and, moreover, had the simple accomplishments necessary for efficient work in the world.

But now we come to a more difficult part of the subject. What on the whole should general education aim at? Education used to be divided into ancient and modern, the classics forming the bulk of the ancient, and modern languages with science being included in modern education. But it is clear now that this is a wholly false division. The true division is literary and scientific; and this must be considered more in detail.

The danger at the present moment is this, that the classical system, thrust into a corner by modern subjects, provided so desolate and tough an education, concerned as it was with such a mass of grammatical niceties, anomalies, syntactical peculiarities, that it had not a chance itself of enlightening or encouraging its victims, and yet, by claiming so much time, kept the other subjects all in elementary stages too. The impatience and the rebellion produced by this reactionary and stagnant system have risen to such a pitch that we are in danger of arguing that, because the classical system has failed, therefore literature has failed. I have been reading a vehement little pamphlet lately in which the author speaks of feeling "a grave concern as to the triviality of the literature to which the education of the present day leads; so much about the failings and foibles of human nature, so little about the majestic and inexorable laws of the physical side." Such reformers as these say: "For goodness' sake, let us have an end of all this nonsense; instead of feeding the minds of boys upon old human visions and fancies and imaginations, let us feed them with realities. Let us teach boys something about the world in which they have to live." With this attitude it is impossible not partly to sympathise. But the danger, as I say, is that we may simply substitute one tyranny for another.

A literary education, as it is called, is a study of

all that deals with the emotions, hopes, fears, desires of mankind, and to some minds these are the transcendently important realities of life; a scientific education deals with man's material environment; and as man is a spiritual being living under material conditions, it is of the utmost importance that both should be studied and realised.

Such a statement as that which I read just now, about "a grave concern as to the triviality of the literature to which the education of the present day leads; so much about the failings and foibles of human nature, so little about the majestic and inexorable laws of the physical side," is palpably one-sided.

It appears to me, in the first place, a very unscientific position to take up; for surely "the failings and foibles of human nature" are just as much scientific facts as any other thing, just as much the outcome of the "majestic and inexorable laws" of Nature as any physical fact. Considering how much of science has been constructed out of the patient study of innumerable details, apparently very trivial in themselves, it is clear that the failings and foibles of human nature are, at least, as worthy as all other details of scientific consideration.

And then, too, human nature as acted upon by the inexorable physical laws is the thing, after all, which concerns and interests us most. It is true that we have to live in a physical universe and we must recognise physical laws. But a minute study of those physical laws must always be a matter for specialists. The ordinary human being has not time or intelligence to go far in the direction of scientific research, while the whole of his life is spent in contact with human nature and its faults and foibles. It is far more important for the ordinary human being to know something about human nature than to know about ocean currents and tides, about light and heat, about stars and meteors. The only part of scientific knowledge which is of practical concern to most human beings is the elementary facts of physiology. And the practical effect of learning about the heroic possibilities of human nature, being moved by stories of courage and patience, of pity and affection, is far deeper and greater than the effect of learning about the motions of planets or the origin of storms, because none of us can escape from the problems of human nature, affecting our daily conduct and our relations with other men, learned and unlearned alike; while the properties of matter, the laws, let us say, of electricity or chemistry, are at best remote from daily life, and can only be apprehended and applied by experts. All of us, for instance, know what it is to be affected by the look of anger or affection in a fellow-creature's face; while the fact that we can only see it because a combination of carbon with oxygen produces an undulatory vibration in the ether which is luminous is not a consideration which can ever have a very wide appeal. For even when we know *how* it happens, we are not much nearer to knowing *why* it happens.

And then, too, the greater part of civilisation and progress depends not upon the scientific discoveries which add to the comforts of life, but upon the cultivation of generous motives, of disinterested sympathies, of desire for justice and order and co-operation. Human happiness is far more knit up with the art

of living peaceably and affectionately with other human beings than with the inexorable laws of matter. Birds and beasts live in the universe without any scientific knowledge of its laws, but with much instinctive and precautionary acquaintance with them. A bird knows what food it needs, and what is dangerous, without having an idea of why it needs food, or why a course of action is dangerous; and the importance of literature is that it develops the imagination and sympathy of man, while science may perhaps cultivate imagination, but can scarcely be held to develop sympathy.

The real difficulty of the whole position lies in our vagueness of aim: we do not really know, and we have never troubled to decide, what we desire the educational process to do for our children. My own belief is that it is a threefold aim. In the first place, education should be elastic enough to enable us to discover aptitude and capacity, and therefore we want variety. The mistake of the classicist is that his ideal education is only a device for discovering literary ability, and the mistake of the modern reforming man of science is precisely the same; a scientific education is a device for discovering scientific capacity. What we need is a method of finding our future experts, for it is of the utmost importance to the race that we should discover, evoke, and use every sort of intellectual ability. What we need is an education both literary and scientific, dealing with ideas and emotions and imaginations as well as with perception and observation and exactness of mind, so that at the time when vocation begins to declare itself we may skim the intellectual cream, so to speak, and set free the best abilities and capacities to pursue their own bent. That is the first aim of education, the discovery of aptitude.

The next aim of education is a wider and more general one: it is to reveal, so far as possible, to the growing mind a real idea of the conditions under which it lives and will have to live. Science is an integral part of such an education, and general knowledge of physical laws and processes is of primary importance. The stars we see above us, the physiography of the globe, the laws of electricity, of weather, of heat and cold, the distribution of plants and animals, the laws and processes of life, a knowledge of mechanics, of manufacture of commodities—about these things no one should be wholly ignorant, but for many a general conception must suffice.

Then, on the other side, come the history of the human race, the rise of man, the growth of ideas, emotions, religious beliefs, the shaping of communities, the interplay of nations, the history, in fact, of civilisation—all this belongs to what may loosely be called the literary side. But to deal merely with scientific conceptions and laws, and not to teach how the spirit of man has developed, how he has organised human society, how he has slowly discovered and availed himself of scientific knowledge, is to leave out what is, perhaps, our main concern. What we have to do is not to leave our youthful citizens in a sort of bewildered solitude; just aware of the little circle in which they live, but to give them on one side a sense of what the natural world in which they live

is like, as well as a notion of how humanity has developed its institutions and its principles.

The third aim of education is to train children in good moral and physical habits, to develop wholesome mental interests and robust health of body—the training of character, in fact. But here the problem is a complicated one. If we only nurture the young in strength and health, and encourage them to believe that the world is a place to get all they can, to fortify themselves in wealth and comfort, we have not developed good citizens at all. They must learn what duty and service and self-sacrifice mean, and that a man's concern is not only himself. This can only be done by the cultivation of an imaginative sympathy, which can put itself in the place of another, and desire to share rather than to amass happiness. This can only be communicated by a perception of the beauty, the generosity, the heroism of human nature, its hopes and aims; and this I believe frankly cannot be attained by the knowledge of scientific laws, but only by human records and the noble flights of human imagination. A literary education is a feeble enough thing if it only deals with grammar and syntax, artifices of style, the jingle of rhythms and prosodies, the devices of ornament and evidence—and this was the fault of classical education, that it so seldom broke through the outskirts into the citadel itself. But the truer and more scientific view of literature is that it is the evoking of a real love of spiritual beauty, and that the masterpieces of literature are great, not because they conform to the rules of critics, but because they answer most nearly to the best and loftiest visions of the human soul—that Homer and Shakespeare and Dante, let us say, are great because they best mirror man's greatness, and not because they afford most scope to the inquisitive pedantry of scholars. What, indeed, we have to fight against is pedantry, which is simply the fault of natures so one-sided in their preference that they invest the smallest details of their study with a significance and an importance that violate all proportion. The literary pedant and the scientific pedant are alike mischievous, because they worship detail and disregard design.

The aims, then, of education are the fortification of health and character, the communication of a general conception of the world as it is, both socially and physically, and the discovery of aptitude and ability, so that the resources of the State may not be wasted or dissipated.

If by the age of about fifteen or sixteen you have assured a boy's interest in general ideas of science and literature, given him some sense of history, by which I mean European history of a biographical and social rather than of a diplomatic or military kind, taught him to read and write simple French, to read and write English, to calculate quickly and correctly, you have done a great deal. It is very difficult to say exactly what we mean by a well-educated boy of eighteen; but if a boy of that age can read an interesting book on some subject of general current interest with something of a critical spirit, and is not wholly at the mercy of a specious and attractive presentment; and if, moreover, in reading a newspaper he does not confine himself wholly to the athletic column, but

wishes to know more or less what is going on in the world—well, I for one should be ready to admit that he was a well-educated boy.

We are much too disposed to think that knowledge itself is valuable. It is valuable precisely in so far as it inspires and animates and trains the mind. The mere knowledge of facts is very unimportant. The boy must know the facts and processes of his subject, of course; but apart from expert knowledge, no knowledge is valuable which does not mean the kindling of interest and faculty. The fact which one cannot forget is the significant fact, not the fact which seems easy to confuse or impossible to remember. I cannot help feeling that in the present push for state as an educational subject a certain confusion exists between the practical utility of science and its value as an educational subject. Elementary and general acquaintance with concrete phenomena and technical processes has no practical utility at all; it is the expert who is useful, the highly trained specialist. Something which is practically useful has not necessarily educational value. What we want to discover is a subject or a set of subjects which quicken intelligence and observation and sympathy and accuracy, which widen the imaginative horizon, which make a man accept his duty and his place in the State, not as a matter of unpleasant necessity, but as a matter of active and eager concern. I do not believe myself that any one subject can do this. If literature, as it has been taught, has failed to exert this influence, I see no reason to believe that science *per se* will do it either. While we abominate the aggressive and bellicose theories of domination which have plunged Europe into strife, it is the tendency of, at all events, section of our community to point to Germany as a country which has contrived to produce an extraordinary average of efficiency, a formidable unanimity of aim.

Yet, if we look at German secondary education, we find that science is actually taught for fewer hours in their schools than in our own. That has been established by the new committee which is examining the question of scientific education. It is certain, I believe, that if scientific education has not had a fair chance, it is not for want of time or of apparatus—but much more a question of method, and still more of teachers. This is really where our difficulty lies. We do not believe sufficiently in education to pay our teachers properly or to make it a career for the best men. The personality of the teacher is the root of the whole matter. What we want is men not only of clear intellect, but men with a touch of inspiration, with a living interest in the beauty and nobility of the subjects they teach. There are many dormant seeds of interest and faculty in boys' minds which can only be quickened to life by something ardent and fructifying in the mind of the teacher.

A good teacher is scarcely cumbered by a bad curriculum, a bad teacher is scarcely assisted by the best curriculum. It may be said that it ought not to be a question of money, but you cannot expect any but the real enthusiasts to embrace a profession which hampers them at every turn with straitened resources and pecuniary anxieties. A man who wishes to marry and bring up his children liberally and intelligently will go

where he can find the means of doing this. You may depend upon it that we shall do nothing in education by a mere juggling with curricula; we shall only do it by securing good and enthusiastic teachers. The imitative faculty of boys is great; and if they see a teacher who really derives animation and joy from his subject, they will wish to acquire the same happiness. Education is not a scientific process; it is a contact of living minds. I remember once examining a number of educational experts on the question of the curriculum. Each of them had some one subject which he declared had solved the question of discipline and drudgery by evoking a natural interest in the pupils. It gradually dawned upon me that each was selecting the particular subject in which he was personally interested; and I perceived that what had carried the day in each case was not educational technique, but personal enthusiasm.

What we want is a simple and elastic curriculum which shall cater for individual taste and aptitude, and correspond in a general way with human faculties and interests. Intellectual discipline—by which I mean that most valuable power of mastering a subject whether you are interested in it or not—can be attained to a certain extent by the uncongenial subjects whatever they may be. But I do not believe in intellectual progress being possible without intellectual interest. The general aim of this curriculum should be to give the pupils some conception of the world as it is; and in this science, literature, art, music, history, geography, mathematics, handicraft, language, and religion must each have a part. Imagination, logic, clearness, observation, interest—these are qualities at which we should aim. Then, when special aptitude is discerned, in the later stages a certain specialisation may begin. What really happened in classical education was that, under the guise of a pretended width of culture, all minds alike were forced into a premature classical specialisation, and this mistake we must not repeat. And, lastly, we must make the profession of teaching remunerative and dignified—that is the most important point of all; and unless we can do this we may shift our curriculum for all eternity without ever emerging out of a ramshackle sort of drudgery which will continue to hang like a dreary veil between the ingenuous child and the glowing interests of the great world in which he has to live and play his part.

## SOME TOPICS DISCUSSED AT THE JANUARY CONFERENCES.

### AFTER-WAR PROBLEMS.

In opening the Conference of Educational Associations on New Year's Day Sir Henry Miers said there seemed now to be general agreement among politicians and educationists on three points—that some provision should be made for the two million children for whom at present the educational ladder ended in mid-air at fourteen; that something must be done to improve the position and prospects of teachers; and that the scholarship system should be reorganised so as to be entirely helpful and in no degree harmful to the cause of education. If education becomes so administered as to give young people the desire to carry on their education for themselves, we shall have achieved one

of the great objects of education, whatever we teach or fail to teach.

Mr. A. L. Smith, the Master of Balliol, delivered the inaugural address immediately after Sir Henry Miers had spoken. He directed attention to the fact that the various educational programmes issued by the Education Reform Council, the National Union of Teachers, the Workers' Educational Association, and several other bodies working in the same direction are in substantial agreement. The chief principle to aim at in the immediate future is now beginning to be understood by the educated public as well as by professional educationists. Many workers have been carrying out experiments without knowing what others are doing, and these experiments show that better workmen are made by first educating them than by setting them to work at an early age. In the modern world no one is educated who is ignorant of the methods of natural science. It is possible without undue expenditure of hours to give generalised science teaching which will supply an intellectual element that nothing else quite gives. Specialised science can follow.

Another hopeful sign is that trade unions are beginning to contribute to education through the tutorial class movement for their members. The movement shows that, however heavy the hours of work, however unpromising the surrounding conditions, the spirit of man is not extinguished. The movement to take in natural science is not hostile to the older subjects. The opinion at Balliol, and widely diffused through the University, is, Mr. Smith said, that there is room for the two, and that a great deal of the old curricula may with advantage be dropped to allow new inspiring subjects to come into university education.

After the war we shall be much more ready to recognise the latent qualities and the real heroism of the teacher, even in an elementary school, and be willing to grant better terms. The sums doled out for education have never been a fraction of what they would have been if we had been really in earnest. The Master of Balliol reported that he had suggested to the Chamber of Commerce at Bradford that £100,000,000 should be spent on education, and he had been surprised to be told that the sum did not intimidate them. To produce industrial harmony we must take up education on the moral and social side in a way that has scarcely been more than experimented upon as yet. Unless we make proper use of our opportunities after victory we shall find in time to come, as has happened in past wars, that the apparent victors are not the real victors. The opportunity is in the direction of national education in the widest sense.

#### MOVING PICTURES IN EDUCATION.

At the annual meeting of the Teachers' Guild, Mrs. A. H. Bright opened a discussion on the use of cinema pictures and their influence on young people. She described the methods adopted in different areas for securing control over picture palaces. She said that experience proved that the small "palaces" on the outskirts of a big town required more supervision than those in the centre. The best way to raise the

tone of cinema and other public exhibitions was, she said, to train the young generation so that they would turn from what was nauseous. She looked forward to the use of the cinema as a great force for the spread of knowledge and education.

Prof. R. A. Gregory said the cinematograph is now passing through a stage common to the history of many like inventions. Four hundred years ago a censorship of printing was established in England, and printers were so abused and imprisoned that for a time the art became almost extinct in this country. Some people wish apparently to present the same attitude towards the moving-picture to-day. It would, however, be just as easy to make out a case for the suppression of printing upon the evidence of the amount of trash and daily drivel published as it is to condemn the picture palace because of its frequent stupidity or criminal suggestion. The time will come when a higher standard of fact and thought will be required by the average man than that which is usually placed before him in the printed page of to-day, and similarly the moving-picture will improve in character when people become dissatisfied with the banal shows now offered them. Instead of condemning the picture palace without qualification, an effort should be made to use it for educative and reasonable recreation. Education authorities should arrange for periodical exhibitions of suitable films at local picture palaces, and they should not be afraid to show on such occasions films to illustrate fiction, as well as those of a historical, geographical, or scientific character.

In the discussion which followed, Dr. Lyttelton said that he is sure these shows are the greatest possible influence in the wrong direction at the present time. The picture shows cannot be made profitable unless they produce silly pictures, and it is the silly things in the shows that are having the bad effect on the present generation. The shows and the audience are indications of a spiritual disease in this country which we ought to combat.

#### WHO SHOULD BE EDUCATED AT UNIVERSITIES?

Speaking to the members of the Teachers' Guild on "The Way to an Educated Democracy," Prof. J. Shelley said we must discover some method, in addition to the crude intellectual test, of determining which of our youth should be sent to our universities. We need a system of intimate personal selection: a system of patronage, such as produced the great works and personalities of Greece, of Rome, and of Renaissance Italy. But the new patronage must be patronage by proxy in the name of the people. As a constructive step towards finding out the real needs of the democracy in education, he offered the new President of the Board of Education the suggestion that he should save money and, much more valuable, save teachers' enthusiasm by reducing the inspectorate by one-half and by appointing instead educational advisers to act as university tutors to the community. The appointment of educational advisers should be by the teaching profession itself and not by local authorities.

#### THE DELIGHTS OF LITERATURE.

A letter from the new President of the Board of Education was read at the annual meeting of the

National Home-Reading Union. Mr. Fisher wrote:—“The National Home-Reading Union is doing, in a quiet way, work of the highest value for the nation. There was a time not very far distant when the great mass of the population was cut off from the delights of literature by ignorance or poverty. This is no longer the case. Everybody now can read something and has enough in his purse wherewith to buy something to read. To-day the danger is not that too little will be read, but that too much will be read of the wrong kind. The pace and urgency of life have increased, and thoughtfulness and velocity are ill-mated companions. Thus, although a great deal of reading is done, much of it is undertaken in a desultory, fortuitous way, without plan or continuity. The National Home-Reading Union corrects this tendency, and encourages reading of the fruitful kind by supplying fiction and a thread of purpose. In a very simple way, and with a minimum of expense, it brings into every individual home some of the advantages of college or university life. During the war, I understand, the Union has done much useful service by keeping alive a sense of the value of good literature and by directing attention to the best sources for the intelligent study of contemporary events. The movement has from the first possessed the entire sympathy of the Board of Education, and I wish for it an expanded sphere of usefulness and an increased measure of support.”

#### INFLUENCE OF ECONOMIC CHANGES ON EDUCATION.

Lord Bryce delivered the presidential address to the annual meeting of the Classical Association at Leeds University. The most striking feature, he said, in the economic changes of the last eight years has been the immense development of industrial production by the application of discoveries in natural science. Employment has been provided for an enormous number of workers, and enormous fortunes have been accumulated by employers who had the foresight or the luck to embark capital in the new forms of manufacture. Thus there has been created in the popular mind an association, now pretty deeply rooted, between the knowledge of applied science and material prosperity. It is this association of ideas, rather than any pride in the achievements of the human intellect by the unveiling of the secrets of Nature and the setting of her forces at work in the service of man, that has made knowledge of physical science seem so supremely important to classes of minds that never before thought about education or tried to estimate the respective value of the various studies needed to train the intelligence and form the character. To put the point in the crudest way, the average man sees that the diffusion of a knowledge of languages, literature, and history does not seem to promise an increase of riches to the nation or to the persons who possess that knowledge in a high degree, while he sees, or thinks he sees, that from a knowledge of chemistry or electricity such an increase may be expected both to the community and to the persons engaged in the industries dependent on those sciences. Two other arguments have weighed with persons whose mental attitude is more reflective, and their force must be admitted. Languages—not merely the ancient languages, but

languages in general—have been too often badly taught, and the learning of them has therefore been found repulsive by most pupils. The results have accordingly been disappointing and out of proportion to the time and labour spent.

#### SIMPLIFIED SPELLING.

Presiding at the meeting of the Simplified Spelling Society in connection with the Conference of Educational Associations, Prof. W. Rippmann said we are very much more uniform in our speech to-day than we used to be, but there is still a great deal of unnecessary and undesirable difference between the speech of different classes of society. It is impossible to estimate the amount of harm that is done by having such a grossly perverse thing as our conventional spelling brought into the children's education at the outset. The child is introduced by it into a study in which one of the most important processes in education, that of reasoning from analogy, is summarily displaced. The logical processes employed in other studies may correct in time the mischief thus done.

Prof. W. E. Barnes said English spelling is bad throughout; every one of our five vowel signs—*a*, *e*, *i*, *o*, and *u*—is freely misused, and the same kind of thing happens to our consonants. We have a useful consonant “*j*,” which represents a sound frequently used in the English language; but when we want to commence a word with the sound of “*j*” we usually use the letter “*g*” instead, and if we want the sound of “*j*” at the end of a word we most commonly use the form “*dge*.” Then, having written “*dge*,” we are often in doubt as to whether we have not overdone matters, and there is a question always in dispute between those who favour “*dge*” and others who think “*dg*” sufficient. The members of the Simplified Spelling Society might introduce some reformed spellings, at any rate into their own correspondence. For example, the final “*e*” might be omitted from such words as “*hav*,” “*giv*,” and “*gon*.” Another reform would be to abolish the absurd distinction between the words spelt with “*ei*” and “*ie*,” such as “*receive*” and “*believe*.” Both these forms are wrong; “*ee*” should be substituted. We must be content, ultimately, with nothing less than making *English spelling a science*; for this it is necessary that each sound of the language should be expressed as simply and as shortly as possible.—Miss Burstall said she thinks the schools ought to begin teaching the reformed spelling of certain words. A list of such words might be drawn up, as has been done in the United States, and the Board of Education asked to allow such forms to be used. She suggested, among others, such changes as “*plow*” for “*plough*,” “*sent*” for “*scent*,” “*theater*,” “*tho*,” “*labor*,” “*program*,” “*dout*,” “*woolen*,” “*gage*,” and “*boro*.”

#### PENSIONS FOR SECONDARY-SCHOOL TEACHERS.

In his presidential address at the annual meeting of the Association of Assistant-masters, Mr. A. A. Somerville dealt, among other important matters, with the question of pensions for secondary-school teachers. No measure, he said, would tend more to attract a supply of capable teachers, or to maintain their efficiency

when attracted into the schools. On the other hand, the wearing consciousness, especially to the married man, that he has no provision for old age tends to depress and deaden him in his work. A scheme of pensions for secondary-school teachers was unfortunately hung up at a most promising stage by the outbreak of the war. It was drawn up by the Board of Education, and warmly welcomed by all secondary-school teachers. It was supported strongly by primary-school teachers, and the present Prime Minister, then Chancellor of the Exchequer, had, in his 1914 Budget speech, made provision for the necessary outlay. Secondary-school teachers felt that it was their patriotic duty not to press for the completion of the scheme during the war, and, up to the present, they have maintained that attitude. But the war has caused large sums of money to flow into the pockets of many classes of the community. Secondary-school teachers, badly paid before the war, are now in much worse case. Their commitments, such as rent and insurance premium (which they have to maintain because of the absence of pensions), remain unaltered, while the cost of living, rates in some cases, and taxes have risen greatly. The time has come to ask the Government what is its intention, if it has any, with regard to pensions for the men and women in our secondary schools. The cost of working the scheme in the first few years would be small, quite out of proportion to the immense encouragement this great measure of reform would give to the teaching profession. Without an adequate provision of pensions, it will be impossible to get anything like an adequate supply of capable teachers for the new schools, which are now generally seen to be essential to real educational development. Besides, there is some reason for regarding the provision of pensions as a real war measure. There are more than 2,000 secondary-school teachers now serving in our Army, most of whom did not wait for compulsion, but freely offered themselves to their country and its great cause. The country would do well to send a practical message of gratitude and hope to these men.

#### SCIENCE IN SECONDARY SCHOOLS.

At the meeting of the Headmasters' Association, the president, the Rev. J. R. Wynne-Edwards, in his address outlined the kind of science which should be taught in secondary schools, and the difficulties in the way of securing it. He said that in science teaching in schools two chief objects are in view: first, the acquisition of facts that every educated man ought to know—the laws of Nature, the constitution of our planet and its atmosphere, the chief properties of light, heat, and electricity, and their bearing upon daily life; and, secondly, the respect of the man of science for truth, his determination to observe phenomena irrespective of preconceived ideas, and to reason on observed facts without being hampered by preconceived theories. Of these two objects the second is the more important, and if we are to keep our place as a nation it is essential that such an attitude of mind shall be recognised as a necessary part of the equipment of all educated men. It has been found by those who have tried it that there is no insuperable difficulty in giving those boys who will later take up classical

studies a suitable course of science up to sixteen. But when we are agreed that the time has come to improve our system of science teaching we are met by two difficulties—who are to be the teachers, and how are we to adapt the teaching to the needs of industry without taking away its power as an intellectual stimulus. Headmasters know that no post is so difficult to fill as that of a science teacher. So long as few of the scholarships at Oxford and Cambridge are awarded for science, and so long as the bias in the public schools is too largely humanistic, so long shall we fail to attract a sufficient proportion of the best brains of the country to the teaching of science. It is absolutely essential that a solution of this difficulty increasing the supply of science teachers should be found. The men must be paid adequate salaries and the highest positions in the profession must be open to them. We have already overcome many prejudices, but another that must go is that no one but a classic can preside over the destinies of our great public schools. The second difficulty is still greater. It is, as has been said, to adapt our science teaching to the needs of industry without taking away its power as an intellectual stimulus, and then persuade the manufacturers of the country that it is to their interest to have the best advice that science can give them and to pay for it accordingly.

#### RECENT RESOLUTIONS ADOPTED BY ASSOCIATIONS OF SECONDARY-SCHOOL TEACHERS.

##### HEADMASTERS' CONFERENCE.

1. THAT this Conference welcomes the letter with regard to war memorials sent to headmasters in the early autumn by H.R.H. the Prince of Wales, as the chairman of the Statutory Committee, and endorses the suggestion that provision of scholarships and exhibitions should form part of the measures taken in public schools to commemorate the fallen.

2. (a) That it is essential to a boy's general education that he should have some knowledge of the natural laws underlying the phenomena of daily life and some training in their experimental investigation.

(b) That, in the opinion of this Conference, this can best be ensured by giving to all boys adequate courses of generalised science work which would normally be completed for the ordinary boy at the age of sixteen.

(c) That, after this stage, boys who require it should take up science work of a more specialised type, while the others should for some time continue to do some science work of a more general character.

3. That, while desirous of improving the teaching of science and making it a reality in all public schools, this Conference deprecates the present proposals of the Oxford Hebdomadal Council for making the passing of an examination in science an essential qualification for an Oxford degree.

4. Circulars 849, 933, and 956. That this Conference approves the general educational policy indicated in these circulars, and in particular the principles:—That all boys in secondary schools should pursue a normal course of education up to the age of about sixteen, unimpaired by premature specialisation and

impeded by the varying demands of external examinations.

(b) That the universities should continue to be the responsible examining authorities in secondary schools, but holds that no further compulsion or restriction of any kind can be usefully applied to schools until general acceptance of an approved "first examination" by universities and professional bodies has been secured. If in any case acceptance is only conditional, the conditions must be of the simplest kind, and a clean sweep must be made of the present absurd complexities. In the details of the proposed first and second examinations there are many points calling for further discussion, and two only will be mentioned in the present resolution:—(i) The Conference holds that "natural science and mathematics should count as two 'groups,'" not as one only. (ii) It adheres to the view expressed in Circular 849, Section VI., regarding such subjects as music, drawing, manual work, and housework, to which may be added physical exercises. It is as far as possible from undervaluing such subjects as essential parts of a good education, but believes that their adequate inclusion can be better secured in other ways than by formal examination at the age of sixteen.

5. That this Conference desires to promote the future work of the National Mission for the younger generation by every means in its power.

6. That this Conference reaffirms its conviction that Greek ought no longer to be retained as a compulsory subject in the Entrance Examinations to the Universities of Oxford and Cambridge. In urging this, the Conference in no way wishes to deny that for those boys who are fit for it there is no finer educational instrument than Greek, nor that there are other compulsory subjects which are open to grave objections.

#### HEADMASTERS' ASSOCIATION.

1. (a) That it be an instruction to council to constitute as soon as possible a standing committee to proceed with the formulation of an educational policy. (b) That this committee shall submit a report to council, and the council, after full consideration of the said report, shall at the earliest convenient opportunity convene an extraordinary general meeting of the association to deal with the conclusions arrived at.

2. That it is of the highest importance to the welfare of this country that the decimal system of weights and measures be adopted, and that this association approves of the policy and aims of the Decimal Association, and invites its members to support the proposals.

3. (a) That in the opinion of this association all boys receiving military training in secondary schools should constitute one corps directly controlled by the War Office and independent of local administration.

(b) That in this corps boys above the age of fifteen who have reached a necessary standard of proficiency should be classed as officer cadets (or members of the Officers Training Corps), and all others as cadets.

(c) That each school contingent, though containing boys of both classes, should be trained by its officers and inspected by the War Office as a single unit.

(d) That officers of the corps should be gazetted to

commissions on the unattached list of the Territorial Force, or the Special Reserve of Officers.

(e) That an annual capitation should be paid to such school contingent for every efficient cadet officer, and a smaller grant for every efficient cadet more than thirteen years of age.

4. A resolution reaffirming the association's conviction that Greek ought not to be a compulsory subject for the Entrance Examinations to Oxford and Cambridge.

5. A resolution declaring that the provision of war bonuses for teachers has become in many cases a matter of urgent necessity, and urging the Government to make special grants to schools in need of assistance for this purpose.

6. A resolution welcoming the recent report of the Consultative Committee of the Board of Education on the provision of scholarships in science and technology at universities and other places of higher education.

#### ASSOCIATION OF ASSISTANT-MASTERS.

1. That any scheme of educational reform should provide for the education of boys to the age of eighteen.

2. That educational control should be rendered more effective by grouping local education authorities round universities as centres.

3. That as the primary need for the future of education is an adequate supply of well-qualified teachers of the right type, the first essentials of any reform in the existing educational system are: (a) a national salaries system, on the lines of the I.A.A.M. model salary scale, with an additional allowance for living expenses in the more expensive centres; (b) a national pension scheme; (c) security of tenure; (d) the establishment of a general system of transfer of teachers, so that, if necessary, a teacher may move from one school to another without loss of position, salary, or pension rights.

4. That it is the opinion of this association that Greek should not be a compulsory subject for the Responsions Examination of the University of Oxford or the Previous Examination of the University of Cambridge, or for the examinations which are accepted as equivalent by the Universities.

#### THE GEOGRAPHICAL ASSOCIATION.

The annual meetings of the Geographical Association were held at the London Day Training College on January 5th and 6th, 1917. The president, Col. Sir Thomas Holdich, R.E., K.C.I.E., K.C.M.G., C.B., gave an address on "Maps," a subject on which he is a leading authority. Miss N. Catty read a paper on "The Value of Modelling in the Early Teaching of Geography." This gave rise to an interesting discussion, which showed that teachers of geography hold very diverse views on the subject. Prof. Fleure, of Aberystwyth, opened the afternoon session with a striking lecture on "Regions in Human Geography, with Special Reference to Europe." He divided Europe into regions of (1) increment; (2) effort; (3) difficulty; (4) privation, showing how the sea modified all, and tracing the changes which had occurred in

some regions so that, for example, a region of difficulty became a region of effort.

Mr. H. J. Mackinder, M.P., opened a discussion on the resolutions drawn up by the Council of Humanistic Studies (representing the Geographical, Historical, Classical, English, and Modern Language Associations). In compliance with the request of this council, each association has prepared a statement regarding the aims to be kept in mind in teaching its subject in schools. The following is the statement read by Mr. Mackinder during the discussion, and accepted by the association:—"When teaching geography in schools we seek to train future citizens to imagine accurately the interaction of human activities and their topographical conditions. As these conditions have been established partly by natural forces and partly by human effort, any discussion of the correlation of various conditions must be both scientific and humanistic. The mind of the citizen must have a topographical background if he is to keep order in the mass of information which he accumulates in the course of his life, and in these days that background must extend over the whole world. Besides giving this necessary mental equipment, we believe that the collection, estimation, and correlation of geographical facts afford a most valuable training in practical judgment as applied to ordinary affairs. For the purpose of encouraging a synthetic attitude of mind towards a definite region, it is necessary that the physical facts borrowed from other sciences which form the basis of geography should not be maintained in water-tight compartments. In other words, the unity of geography, for school purposes at any rate, is essentially humanistic, and on one side related closely to history, but the assembling of the physical data is a very important part of geographical teaching, and cannot be left to the teachers of other subjects. Experience has shown that the art of geographical correlation depends on specially trained habits of thought."

On January 6th a joint meeting of the Mathematical and Geographical Associations was held, under the presidency of Mr. Mackinder. Prof. Nunn gave an exceedingly suggestive lecture, illustrated by a wealth of diagrams, novel apparatus, etc., on "The Teaching of Map Projections." The discussion which followed was taken part in by members of both associations, and it was evident that the holding of such joint meetings was of great value.

## OXFORD LOCAL EXAMINATIONS.

### SET SUBJECTS FOR 1918.

#### Preliminary (July and December).

*English.*—(c) Defoe, "Robinson Crusoe," part i.; (d) Blackmore, "Lorna Doone," abridged by W. A. Warren (Sampson Low); (e) Macaulay, "Horatius" and "Lake Regillus," with "A Book of Verse for Boys and Girls," part i., compiled by J. C. Smith (Clarendon Press); (f) Scott, "Lay of the Last Minstrel."

*History.*—(a) Ancient History as treated in "Outlines of Greek and Roman History," by M. A. Hamilton, pp. 32-end (Clarendon Press); (b) English History, either (A) Outlines from 55 B.C. to A.D. 1399; or (B)

Outlines from 1399 to 1714; or (C) Outlines from 1689 to 1837.

*Geography.*—(iii) The geography of one of the following: (A) England and Wales; (B) India.

*Religious Knowledge.*—(a) 1 Samuel i.-xvii.; (b) St. Matthew x.-end; (c) Acts xv. 36-xxviii.; (d) the Church Catechism.

*Latin.*—"Scenes from the Life of Hannibal," by W. D. Lowe (Clarendon Press).

*Greek.*—"Selections from Herodotus," by W. D. Lowe (Clarendon Press).

*French.*—Perrault, "Quatre Contes," ed. Wilson Green (Clarendon Press).

*German.*—"Kinderfreuden" (Clarendon Press).

#### Junior (March, July, and December).

*English.*—(c) Either Spenser, "Faery Queene," I. and Shakespeare, "Midsummer Night's Dream," or Scott, "Rob Roy," and Stevenson, "Treasure Island" (d) either Shakespeare, "Macbeth" and "Merchant of Venice," or Shakespeare, "Tempest," or Shakespeare "Julius Cæsar"; (e) either Scott, "Marmion," with "Selections from Malory," ed. H. Wragg (Clarendon Press), or Tennyson, "Ænone," "The Lotus-Eaters," with Longfellow, "Evangeline," "Hiawatha"; (f) either "Lyra Historica," by Windsor and Turrell parts i., ii., iii. (Clarendon Press), or Goldsmith, "The Traveller," "The Deserted Village," with Byron "Childe Harold," III.; (g) Dickens, "A Tale of Two Cities," abridged by R. Scott (Clarendon Press); (h) either Lytton, "Last of the Barons," or Blackmore "Lorna Doone"; (i) Swift, "Gulliver's Travels," ed Gough (Clarendon Press), with Defoe, "Robinson Crusoe," part i.

*History.*—(a) English History, either (i) or (ii). (i) Either (A) from 55 B.C. to 1485; or (B) from 1485 to 1714; or (C) from 1689 to 1837. (b) General History from 1066 to 1516. (c) Foreign History. Outlines of General European History from 1254 to 1415.

*Geography.*—(iii) One of (A) Mediterranean Region, (B) Monsoon Region of Asia, (C) South America.

*Religious Knowledge.*—Old Testament History, from the descent of Jacob into Egypt to the election of Saul; (b) 1 Samuel; (c) St. Matthew; (d) Acts xiii. to xxviii.; (e) Prayer Book.

*Latin.*—Cæsar, De Bello Gallico, II.; Ovid, Metamorphoses, III. (Clarendon Press Selection).

*Greek.*—Lucian, Vera Historia, Book I., ed. Jerram, lines 54-669 (Clarendon Press).

*French.*—Soulié, "Napoléon," etc. (Clarendon Press), and de Maupassant, "Contes de Guerre, 1870" (Clarendon Press).

*German.*—Riehl, "Seines Vaters Sohn" and "Der Gespensterkampf" (Clarendon Press).

#### Senior (March, July, and December).

*English.*—(d) Either Shakespeare, "Hamlet," "King Lear," "The Tempest," or Spenser, "Faery Queene," I., II., with Shakespeare, "Midsummer Night's Dream," and Milton, "Comus," or Thackeray, "Vanity Fair," with Byron, "Childe Harold," III., IV., and Sonnets by Wordsworth, selected by A. T. Quiller-Couch (Clarendon Press), or the Poetical Works of Tennyson (excluding the Dramas); (e) either Chaucer, "The Tale of the Man of Lawe," "The

"Send Nonnes Tale," or Shakespeare, "Julius Cesar" and "Merchant of Venice," or Shakespeare, "Henry V.," with "Lyra Historica," parts i. and ii. (Clarendon Press), or Marlowe, "Dr. Faustus," with "Faust," part i. (World's Classics), or Morris, "Life and Death of Janus," or Palgrave's "Golden Treasury," ed. Wheeler (Oxford University Press); either Scott, "The Antiquary" and "The Lord of the Isles," or Pitt, "War Speeches," ed. Coupland (Clarendon Press), or Peacock, "Selected English Poems," pp. 30-429 (Clarendon Press), or Lytton, "The Last of the Barons," with Kingsley, "Hered and the Wake," or Kinglake, "Eothen," with Scott, "The Talisman," or Carlyle, "Past and Present," or Macaulay, "Essay on Frederick the Great," and "Selections from Carlyle's Life of Frederick the Great," ed. Hughes (Clarendon Press).

**History.**—(a) Either Greek History, the Outlines from 445 to 323 B.C., or Roman History, the Outlines from 340 to 201 B.C.; (b) English History. Either (i) or (ii). (i) Either (A) from 55 B.C. to 1485; or (B) from 55 to 1714; or (C) from 1603 to 1815; or (D) from 55 to 1880. (ii) Outlines of English History from the Anglo-Saxon Conquest to 1837. (c) General History. Either (F) the Extension of European Power to other Continents, or (G) Western Progress (as described in F. S. Marvin, "The Living Past," ed. ii. : Clarendon Press). (d) Foreign History, (H) Outlines of General European History from 1254 to 1415; (K) Outlines of the History of Prussia from 1648 to 1871; (L) Outlines of the History of the Balkan Peninsula and of Turkey-in-Europe from 1774 to 1913. (e) Indian History, (M) Outlines of the History of India from 1742 to 1858. (f) Colonial History, (N) "The History of the Union of South Africa," by Sir C. P. Lucas (Clarendon Press).

**Geography.**—(iii) One of (A) Europe (excluding Scandinavia, Spain and Portugal), (B) Asia (excluding parts east of 100° E.), (C) South America (including the West Indies).

**Religious Knowledge.**—Old Testament History, the history of the Northern and Southern Kingdoms, from the death of David to the death of Jeroboam II., with special reference to 1 Kings, 2 Kings i.-xiv., Hosea, Amos; (b) 1 Samuel; (c) St. Matthew; (d) Acts xiii.-xviii.; (e) Greek Testament, Acts i.-xiv. (including the subject-matter); (f) Philippians and 1 Peter; (g) Prayer Book (Church Catechism, full text and explanations, with Office for Holy Communion in the Book of Common Prayer).

**Latin.**—Virgil, *Aeneid*, V. (604-end), VI.; Caesar, De Bello Gallico, I., II.; Cicero, Pro Lege Manilia.

**Greek.**—Xenophon, *Anabasis*, II.; Sophocles, Scenes from Ajax, ed. Laurence (Clarendon Press).

**The Oxford Geographies.** *The Junior Geography.* By A. J. Herbertson and R. L. Thompson. Sixth edition, revised by O. J. R. Howarth. 288 pp; maps, &c. (Oxford: Clarendon Press.) 2s.—Mr. Howarth has revised this well-known text-book in the same spirit and with the same thoroughness which he brought to bear upon the "Senior Geography" in the same series; a notice of the improvements he effected appeared recently in these columns.

## ITEMS OF INTEREST.

### GENERAL.

As a temporary measure, and under the necessity of economy imposed by the circumstances of war, THE SCHOOL WORLD appears this month without its distinctive apple-green wrapper. We have not discarded this characteristic without regret, and we hope that the time is not far distant when it will be renewed. In any case, the change of appearance does not carry with it any alteration in the scope and character of the contents of the magazine, and we have confidence that these will continue to ensure for us the support of our numerous readers, both abroad and at home.

THE Secretary of the Board of Education has, in Circular 975, issued to local education authorities a copy of a letter he has received from the Home Office on the subject of juvenile offences. Inquiries which have been made of the police in seventeen of the largest towns reveal the fact that, comparing the three months ending February, 1915, with the three months ending February, 1916, the total number of children and young persons charged with punishable offences rose from 2,686 to 3,596, the increase having been experienced in practically all the towns consulted. The increase, which appears to be still going on, is mainly caused by an increase of 50 per cent. in cases of larceny. As the Home Office points out, owing to the lessening of parental control through absence of the father, and through other causes, children are often left to wander the streets; and the suggestion is made that the hands of the organisers of boys' and girls' clubs and brigades might be strengthened by making it easier for them to secure the use of elementary-school buildings in the evenings. The local education authorities are recommended to take the initiative, and to communicate with the leading club and brigade organisations in the district, offering to consider any application which those bodies may wish to make for the use of school buildings on one or more nights in the week.

THE Joint Matriculation Board of the Universities of Manchester, Liverpool, Leeds, Sheffield, and Birmingham will institute during this year a new school certificate, and in 1918 a higher certificate, based on a group system of studies. These decisions are the natural result of Circular 849 of the Board of Education, and bring the northern universities into line with the older universities. The new school certificate will offer a test of the work of pupils at secondary schools on the completion of at least a three years' course of study. The subjects to be taken for the higher certificates are arranged in groups, and it is required that a candidate shall pass in a group and in a subsidiary subject generally taken from outside that particular group. The question papers set for the school certificate will be simpler in character than those of the matriculation examination conducted by the Joint Board, but a higher standard of performance will be required to obtain a pass "with credit," which will excuse the candidate from any further matriculation test. Full particulars concerning the new examinations can be

obtained on application to the secretary of the Joint Matriculation Board, 24 Dover Street, Manchester.

THE annual general meeting of the Incorporated Association of Assistant-masters in Secondary Schools was held at University College, London, on January 3rd. Mr. H. P. Lunn (Holloway County School), the newly elected chairman for 1917, presided. The annual statement of accounts was presented by the hon. treasurer, Mr. J. Hart-Smith (Battersea Secondary School). Bishop Welldon addressed the meeting on "Some Educational Lessons of the War." A verbatim report of the address is included in the January issue of the *A.M.I.*, the journal of the association. The adoption of the annual report of the executive committee for 1917 was moved by the retiring chairman, Mr. A. A. Somerville (Eton College), who reviewed the work of the association during the past year.

THE issue of the *Schoolmaster* for December 30th reports that the work of the Examinations Board of the National Union of Teachers is gradually to be discontinued. As the syllabus for 1917 was issued some time ago, the examinations will be held as usual this year. In 1918 and 1919 examinations will be held in the intermediate and advanced stages only for those candidates who hold an elementary certificate. No examinations will be held after 1919. The work of the board has been consistently conducted in the face of financial difficulties in order to demonstrate that the National Union of Teachers is interested in other matters than the purely professional affairs of its members, but the outbreak of war reduced the number of candidates so considerably that further work must cease. Despite the fact that money has not been spent lavishly upon advertisements of the examinations, there can be no doubt that many evening-school students were stimulated to further endeavours by obtaining a "pass" in one or more subjects. Hence the work of the Board was useful, although it never achieved its primary object—to become a diploma-granting body for teachers.

WITH the spread of cadet corps arose the need for a Public Secondary Schools Cadet Camp, and we have received from Lieut. W. R. Kingham, of Watford Grammar School, a copy of the printed account of the successful camp which was held at Marlborough last August. The booklet of forty pages is published for sixpence, and should prove of exceeding interest to all officers in school cadet corps. More than twelve hundred cadets and seventy officers assembled from schools between Huddersfield and Southampton, Canterbury and Crediton, under the command of Major R. Howard, of the Devon Regiment. Forty-one schools sent contingents, and in many cases more than forty boys came from the same school. Besides the cadet work, swimming and sports gave the boys a variety of interests; the smaller boys were formed into two "bantam" platoons.

THE Oxford University Press has issued a general catalogue of the publications which it has undertaken not only for the University of Oxford, but for other learned societies. There are 480 pages devoted to a

subject catalogue, and eighty-six pages to an index of authors and editors. The book-lover and the student will find this volume both interesting and useful; the bibliographical information is enlivened by specimen illustrations, some—like that of the original title-page of "Samson Agonistes"—of unique interest, and by occasional brief extracts from the books themselves. This issue of the catalogue will be current for some considerable time, and lists of books subsequently published will together form a complete list of all the books issued by the press since this catalogue was compiled. School librarians should, therefore, write for a copy of this publication to be installed as one of their permanent books of reference.

DR. R. MULLINEUX WALMSLEY, principal of the Northampton Polytechnic, in his annual report gives some details of the effect of the war upon the institute. In July, 1915, the manufacture of high-class munitions on a commercial scale was commenced, and has since been consistently maintained; consequently only the first year's course in engineering has been undertaken, and those students who should have entered a later course have either continued to produce munitions or entered the Army, and no students have passed into the employ of engineering firms. Important educational work under the Ministry of Munitions has been undertaken. Women students have been trained in a comparatively short course in the grinding of lenses and prisms for optical instruments. Disabled soldiers and sailors have been trained as electric-power sub-station attendants; four complete courses have been given, and the whole of the qualified men have been satisfactorily placed in electric supply undertakings all over the country. The senior members of the staff have also been able to do a considerable amount of confidential work for the Government, and both in this respect and in the case of munitions-making only out-of-pocket expenses have been charged to the Treasury.

THE annual report of the City and Guilds of London Institute, Department of Technology, shows how markedly the work has been disturbed by the war. Although the number of registered classes was reduced by only 20 per cent. from the pre-war figures, the number of students fell by 40 per cent., and the number of examination candidates dropped by more than 60 per cent. On the other hand, the proportion of successful candidates in the examinations was maintained. The decreases for last session were much more serious than those for the first year of the war. For the first time in its history examinations of the institute were held on foreign soil; twelve candidates were examined in telegraphy and three in telephony at Havre. One candidate was examined in telegraphy on board H.M.S. *Queen Mary*. The report concludes with the opinions that the nation in general is not alive to the full importance of technical instruction, that employers must change their attitude towards technical training, and that there is need for reform in all classes of schools, not with the view of turning men into machines, but of providing them with the raw material of knowledge which they need for intellectual development.

**THE Education Gazette**, Cape of Good Hope Province, for November 23rd chronicles the beginnings of a movement towards a happy and united white South Africa. Mr. G. R. Hofmeyr, Clerk of the House of Assembly, hopes to attain this ideal by means of the children and their teachers. He suggests that an aim of the schools should lie in the realisation by both Dutch and English that their two languages, their histories, and their traditions have become a common asset of a common people. This aim is to be achieved by the foundation of a Bond of Union of the children of South Africa of white parentage under the title "The Union of the Youth of South Africa." Each member of the union shall undertake the acquisition of a thorough knowledge of both English and Dutch, spoken and written, the reading of the histories of England and the Netherlands, the cultivation of a love of the flora and fauna, and an appreciation of the scenery and climate, of South Africa, etc. Where the objects cannot be attained through the ordinary school curriculum, it is intended to supplement the school instruction for this particular purpose. Mr. Hofmeyr does not desire to Dutchify the English, or Anglicise the Dutch, child, but to lead both to those South Africans, like the Canadians of English and French descent.

Many science teachers are dissatisfied with the customary beginner's course in science in English secondary schools. In the United States a similar feeling prevails, and the *School Review* for December 1916 has the sentiment in an article by Mr. F. D. Barber, of the Illinois State Normal University. Gradually elementary courses in science have become more and more barren of detail and devoid of those touches of human interest which made the earlier popular presentation fascinating. Organised knowledge concerning Nature is not static; hence no school course in science should remain static, and it is time to take account of the tremendous changes in the world due to applied science. The first year's work should be based upon the applications of science as found in the home, the street, and the school. Lighting, heating, water supply, sewage disposal, labour-saving machinery, weather, climate, food and nutrition, are subjects which claim attention. The second year's course should deal with life in the garden, orchard, pond, lake, or river, and should include a treatment of personal hygiene and community sanitation. Special courses in science to suit the school or the pupil should follow during the next two years. These suggestions of a fundamental change in science teaching are worthy of consideration.

In an article entitled "Education after the War," in the issue of *Science* for December 15th last, Profs. W. S. Franklin and Barry MacNutt consider a number of points raised in the discussion on education initiated by Lord Haldane last summer in the House of Lords. They recognise frankly the existence of unfriendliness towards science teaching among those whose work is more closely connected with human things, and they take an attempt to account for it. Science, they urge, is finding out and learning *how*, whereas most people

think of it only in terms of its material results. It must be admitted, they say, that "side by side with great advances in material prosperity, due largely to the applications of science, there has been a vast deterioration in character," as Lord Cromer expressed it in the debate referred to. Most of the unfriendliness to science resolves itself into a hatred of material worship. The greatest danger of our time, they conclude, "is the confusion of boundaries between thing-philosophy and human-philosophy, between the philosophy of material conquest and power and that intimate philosophy of comfort which makes life, not easy, but worth while."

THE report of the meetings of the Conference of Educational Associations is in the printer's hands, and it is hoped to publish it by the end of February. The report will contain the Master of Balliol's address and the papers that were read at the meetings, about thirty in all. Copies, if ordered before publication, will be 1s. 9d., post free; if ordered afterwards, 2s. Orders should be sent to the Secretary, 9 Brunswick Square, London, W.C.

#### SCOTTISH.

THE congress arranged by the Education Reform Committee of the three educational associations in Scotland was held during the first week of the new year in the Royal Technical College, Glasgow. By common consent the meeting was voted a great success. From beginning to end there was a crowded attendance, and so keen was the interest raised that the audience sat steadily throughout each sederunt of two or three hours. The subjects brought up for consideration comprised only a small portion of the field covered by the Reform Committee's deliberations, but they were all of vital interest, and made a strong appeal both to educationists and to the general public. Dr. Morgan, principal, Edinburgh Provincial College, who presided at the opening sederunt, delivered an address on the need for educational reform and the direction it should take. He said that the ideals of educational reform might be summed up under two heads: (1) the securing of equality of educational opportunity so as to utilise to the fullest extent the human resources of the whole nation, and (2) the development and utilisation to the highest degree of the spiritual forces of the people. Mr. D. M. Cowan's plea for a National Council of Education was remarkable for its combination of relentless logic and sparkling wit. Mr. Bernard Shaw has charged teachers with being "dull dogs," but if he had been present at this address he would have been greatly shaken in his opinion.

DR. WILLIAM BOYD, lecturer on education in Glasgow University, made out a strong case for the encouragement of educational research. He differentiated between theoretical and practical research. The former required expert knowledge and skill, as well as ample leisure, and could be best accomplished in connection with universities and training colleges. Practical research, on the other hand, was the proper province of teachers and inspectors. Inspectors, owing to the fact that they saw school work carried on under a great variety of conditions, were in a favourable

position to arrive at a reasoned judgment on a variety of school problems. But if teaching was to be a profession worthy of the name, the bulk of the research work would have to be done by the members of the profession themselves. Dr. Boyd suggested that a research committee of the Educational Institute should be set up to determine what problems should be taken up, to devise tests for their solution, and to select the schools where these tests would be applied. He also advocated the publication of a pedagogical journal on the model of the *Journal of Experimental Pedagogy*, edited by Prof. J. A. Green. Among other subjects brought before the congress were education of girls and the position of women teachers; moral education; commercial and technical education; and the professional status of the teacher. Resolutions were also passed in favour of raising the day-school age to fifteen, of compulsory part-time day continuation education to eighteen years of age, and of national scales of salaries on a greatly improved basis as compared with any existing scales.

THE Glasgow Chamber of Commerce is waking up to the necessity of expanding the industrial and commercial interests of the country and of adopting new methods to secure these ends. At a recent meeting a proposal was approved to establish an intelligence department which would keep in touch with the chambers of commerce in other parts of the United Kingdom, the Dominions, and other countries, and so be able to supply information concerning foreign tariffs, customs regulations, and trade conditions generally. It was also agreed, in view of the expected developments in the commercial relations with Russia, to establish a Russian section to collect information for the benefit of those wishing to establish or extend business relations with that country. The chamber also proposes to establish a monthly journal, and to provide a room supplied with Government publications, telegraphic codes, and other commercial works of reference. The Lord Provost of Glasgow has placed himself at the head of the movement to raise funds to secure the above objects, and also to provide increased educational facilities for the study of Russian. He has made an appeal for £50,000, part of which will be devoted to providing eight travelling scholarships for the study of Russian. This evidence of awakened activity on the part of the chamber of commerce will be heartily welcomed by all friends of education. It is a somewhat late acknowledgment of the fact that purely individualistic effort will no longer suffice against the co-operative and co-ordinated efforts of our rivals.

AT a meeting of Glasgow University Court the principal, Sir Donald MacAlister, announced that under the will of the late Mr. Robert Marshall, of Grangehill, Beith, an endowment had been left of £700 per annum for the purpose of founding a chair in French language and literature, to be known as the Marshall chair. It says very little for the enterprise of the Scottish universities that this will be the first chair of modern languages in Scotland. Even the traditional *entente* between Scotland and France has not availed to give dignity and importance to the

study of the French language in this country. Scotland in many directions seems content to live on its past, and to make no attempt to bring itself abreast of modern conditions. The educational ferment that has been working in England for the past fifteen years has scarcely any counterpart in Scotland. The northern kingdom must begin to make new traditions or decline on the old.

THE Scotch Education Department has been successful in its appeal to the Treasury for increased grants in aid of the expenditure incurred by school boards in giving bonuses to their teachers to help meet the increased cost of living. The scale of grants sanctioned is as follows:—(a) Where salaries do not exceed £110 per annum, a sum not exceeding one-half the bonus paid, or £5 per annum as maximum; (b) on salaries above £110, but less than £160, one-half the bonus paid, or the sum of £4 as maximum. The grant will be paid as from July 1st, 1916, provided the bonuses are also made retrospective to that date. It is not clear whether any grant will be paid in those cases where boards refuse to give any allowance, but the Education Department may be trusted to see that pressure is brought to bear on every board to do its duty in this matter.

THE Edinburgh Provincial Committee for the Training of Teachers has just issued a report on the supply of teachers. It directs attention to the fact that for several years the supply of men teachers has been steadily decreasing. The present enrolments in junior student centres foreshadow a still further decrease in the future, and this is likely to be accentuated by the wastage of war and the increased competition for youths by industry and commerce. The report strongly urges the Government to take immediate steps to improve the supply of men teachers and declares that any measures so taken must make provision for improved salaries and further opportunities of promotion.

#### IRISH.

THE most important event of the month, which should have far-reaching results in intermediate education, is the completion of the scheme for the registration of intermediate-school teachers under the Intermediate Education Act of 1914. The Registration Council, as finally constituted by the Lord Lieutenant last autumn, has accomplished its work with creditable dispatch; its regulations have been approved by the Lord Lieutenant, and it will be possible for teachers to apply for registration in the spring. The regulations, when published, will show that the council has fixed a high standard for permanent registration. It will require academic qualifications consisting of a degree or its equivalent, professional training as shown by a teaching diploma, and professional experience for a certain number of years. There will be a transitional period during which teachers at present engaged in intermediate work will be able to obtain registration on easier conditions, their rights being completely safeguarded. It will soon, therefore, be possible to speak of a real profession of intermediate- or secondary-school teachers in Ireland, and

on the £40,000 grant can be allocated in accordance with a permanent scheme.

The Intermediate Board has published its time-table of examinations for the present year. The examinations will begin on Wednesday, June 13th, and continue every week-day until Thursday, June 21st. There are no differences in detail to be noted as regards the hours or the subjects of examination.

TOWARDS the end of December a meeting was held in the theatre of the Royal Dublin Society to discuss the training of research workers. Prof. Joly, who was the chair, stated that Germany owed her scientific conquests to the attention she had paid to the training of research students, while in our country an indifference to, or even an actual prejudice against, scientific education and culture is so common as almost to amount to a national characteristic. The session was opened by Prof. McClelland, who was of opinion that no great amount of thought has been given in the past to the training of the research worker. He divided the years of study and training into three periods: under fifteen years of age; between fifteen and eighteen; and above eighteen. Under fifteen years of age he suggests that science teaching should not be too detailed, that its main object should be to develop observation and an inquiring spirit of mind, and that this can be done by botany, ecology, and astronomy. Between fifteen and eighteen a course of study should be chosen which (1) teach accuracy of work; (2) give a training in testing; and (3) lay a foundation for further study. For this he would prefer one compulsory course of general science study to the study of physics in one school, of chemistry in another, of botany in a third, and so on. School courses must be simplified. Mathematics, languages (including classics), and science should be sufficient for school work.

AFTER eighteen years of age, when students enter the university, they should not for the first year specialise too much, and should include mathematics as an important part of their work. In the second and third years they should devote most of their time to their special subjects. During these two years they should live in the atmosphere of research, and their work should have special reference to recent advances in their subject. It was after the third year that the attitude of the university towards research became really important, and provision should be made to enable all promising students of science to do a post-graduate course of research, even if they do not intend to devote their time to research work. He thought, too, that research work suffered from bad mathematical training, and that more suitable mathematical work should be required from all science students. The discussion was continued by Profs. Young, Wilson, and H. H. Irwin, Mr. G. Fletcher, and others.

A MEMORIAL dealing with the introduction of an examination in science for pass students by the Intermediate Board has been forwarded to the Chief Secretary by the governing bodies of many important schools in the North of Ireland, and by the Belfast Chamber of Commerce. It points out that for fifteen

years the Intermediate Board has handed over the organisation of science teaching in secondary schools to the Department of Agriculture and Technical Instruction. The department has avoided written examinations, and has aimed at improving science teaching by insisting on properly qualified teachers, by limiting the size of classes, by working through approved courses of study, and by inspection. This method has allowed an elasticity in teaching which has raised the teaching of science to a level which will bear comparison even with the science work of Scottish schools. The department's methods are opposed to the Intermediate Board's system of payment by the results of a written examination, and it pays £28,000 a year to the schools for work done upon its lines. The Intermediate Board has introduced its new rule prescribing a written examination without consulting the teachers or the department, at a time, too, when the teaching of science is receiving the most serious consideration of the highest educational authorities, and the memorial therefore asks that the Intermediate Board be invited to suspend, for the present year at least, the operation of the new rule until the subject has received fuller consideration.

#### WELSH.

SPEAKING at a series of conferences of Sunday-school workers at Cardiff, Sir R. Baden-Powell accused education of having in the past begun its work at the wrong end by seeking to instruct instead of educating the child, with the result that while a large sum of money was spent on education, a large sum had also to be spent on remedial measures. He claimed that the Boy Scout movement laid hold first on the boy's spirit, drew out the best in him, and, starting by looking at things from his point of view, succeeded in developing his character on the right lines. The boy was put on his honour; proper discipline consisted in making him see that unless he did this or that he was not "playing the game"; ideals of devotion, fidelity, chivalry, and religion were put before him. Scouts had been given many duties to perform during the war, and quite lately the Home Office had requested their aid in the prevention of juvenile crime.

ARRANGEMENTS have been made for a course of instruction in aviation at Cardiff Technical College; it is hoped that the creation of a local interest in the subject may lead to the foundation of an important industry in the neighbourhood.

TRADE-UNIONS and other working-class organisations are taking a daily increasing interest in the methods, aims, and conditions of education. A conference at Merthyr recently adopted a programme including full public control of schools, colleges, and universities, the abolition of education fees, the raising of the school-leaving age to sixteen, higher salaries for teachers, reduction in the size of classes, and a higher standard of hygienic conditions. Vigorous protests were raised against the employment of children after school hours, and men who fought for an eight hours' day for themselves were accused of forcing their children to work for fifteen hours, even though in some cases £7 or £8 a week came into the house as wages

THE National Eisteddfod of 1918 is to be held at Neath, and enthusiastic support is to be given by the district. An important meeting was held on January 9th to make preliminary arrangements for what it is hoped will be a great success as a "Peace Eisteddfod."

THE Royal Commission on University Education in Wales continues to make progress in ascertaining the views of all classes of persons interested. Deputations were received in December from Bangor University College, the South Wales and Monmouthshire School of Mines, the lecturers of Aberystwyth and Cardiff Colleges, and the Central Students' Representative Council. Further hearings are fixed for January 25th and 26th. Mr. William George has an article in the *Beirniad* calling on Wales to prevent the control of the university from passing out of the hands of her own representatives into those of nominees of the Crown. Sir Henry Jones has formulated a scheme for linking up all education in Wales and making it free of all fees by imposing a penny rate, which he holds would cover the cost. Teachers, who hope to see after the war all education controlled by provincial authorities, grouped round, though not dominated by, present or new universities, hope to see also the findings of the Commission correlated with the scheme for a Welsh National Council for Education, and this council serving as the first working example of such a provincial authority. They will certainly strive for such limitation of local autonomy as shall secure the free passage of teachers from England to Wales, or *vice versa*, without loss of status, salaries, tenure, or pension rights.

### THE LATEST DEFENCE OF THE CLASSICS.

*A Defence of Classical Education.* By R. W. Livingstone. 278 pp. (Macmillan.) 4s. 6d. net.

No one who has followed the classical controversy during the last twenty or thirty years would expect a new defence of the classics in education to be supported by substantially new arguments. One is therefore not surprised to find that on the whole Mr. Livingstone, in his "Defence of Classical Education," traverses somewhat well-trodden ground. Yet the book is by no means superfluous. For one thing, most apologies for the position of Greek and Latin have taken the form of short essays rather than of formal treatises. And most of them, one must confess, lack the touch of charm and brilliance that compel one to read Mr. Livingstone to the end and without pause. But the chief reasons why Mr. Livingstone's enterprise was well worth undertaking are that many people who now write to the papers on the subject have obviously not acquainted themselves with the arguments for the classics; and that, even if they had done so, those arguments would still need to be presented afresh, so as to meet in detail, and with an eye upon coming educational reconstruction, recent onslaughts upon the classical curriculum.

Taking as the text of one of his earlier chapters Sir E. Schäfer's recent declaration that "instruction in science should form the basis of secondary education, and should even share with the three R's the time allotted to elementary education," Mr. Livingstone has no difficulty in entering a strong counter-plea for what, for convenience' sake, he calls the

humanities. "The great gap in science is that it tells us hardly anything about man. This sounds paradoxical; yet consider. Suppose that we have studied physics, chemistry, physiology, zoology, and the rest, how much do we thereby know of man? Perhaps we have mastered the history of his tissues, his nervous system, his bones and sinews; perhaps we understand his structure and constitution, the laws which regulate his production, growth, and decay. Still, we know nothing of him as he moves in actual life. The man who is our friend, enemy, kinsman, partner, colleague, with whom we live and do business, who governs or is governed by us, has never once come within our view."

This is excellently said, and is most aptly illustrated in the author's general defence of the literary and historical and philosophical elements of the secondary-school and university curriculum. In the course of his defence he shows that Science, so far from making her followers good guides in matters outside her own confined kingdom, may cause the best of them to utter "preposterous judgments" on these matters. At this point, however, Mr. Livingstone surely does an injustice to Darwin. When Darwin wrote that he could not endure to read a line of poetry, that Shakespeare nauseated him, and that he had almost lost his taste for pictures and music, he was not uttering a "preposterous judgment" on the worth of these things. He was bewailing, in truly pathetic vein, the fate which had reduced his mind to "a kind of machine for grinding general laws out of large collections of facts." The case was far otherwise with that high-priest of pedantry, Herbert Spencer, whom Mr. Livingstone, I suppose inadvertently, here places alongside Darwin. When Spencer complacently remarked, on the appearance of Carlyle's "Cromwell," that he could not waste time in estimating the character of a man who lived two centuries ago, he displayed a spirit of un wisdom which Mr. Livingstone justly brands as "dogmatic fatuity," but which was wholly remote from Darwin's sincere lament.

But this only by the way. So long as Mr. Livingstone is arguing for the general place of the humanities in education, he succeeds, I imagine, in carrying conviction to the minds of most of his readers. At an early point, however, in my perusal of the book, I found myself asking, I confess somewhat suspiciously, what the writer really wants, and how his general defence is meant to work out in detail. Like the impatient reader of a novel desirous of knowing how it all ends, I soon found it necessary to turn to the last pages—not, however, without the reflection that Mr. Livingstone would have done well to state his position clearly at the outset. Facing, in his final chapter, the actual situation, he tells us that the main problem is threefold, relating to (1) small boys and laggards, under fifteen or sixteen years of age, with whom he throws in "the drudges and lotus-eaters of seventeen and eighteen, who linger half-way up a school"; (2) boys who reach a sixth form and get facility enough in reading ancient languages really to appreciate them as literature; and (3) classics at the university. This is surely an extraordinary division of the human material at the disposal of the educator. It suggests that its author has dwelt much on the mountain-tops with a comparatively few select and kindred spirits. It does not suggest that he can claim close acquaintance with boys, much less with girls, whom he never mentions. With his remarks about sixth-form and university classics I do not presume to deal, except to say that here he seems to me to show himself conspicuously competent to say what the classical course may do for the elect. But to bundle together small boys, laggards, drudges, and lotus-eaters! Fie upon you, Mr. Livingstone! After

one cannot expect you to be a safe guide on questions of school curricula. Too obviously you believe in your heart of hearts that Oxford Greats are the measure of all values, including the potential value of a small boy, and of the boy who does not take kindly to your favourite studies.

In the third chapter of the book the abstract case for the maintenance of the study of Greek is made out with convincing thoroughness which the reading of the preceding chapters has led one to anticipate. The trouble is in the concrete application of the case. Nothing could be clearer than that the study of Greek books whose tastes lead them in that direction must not be allowed to languish. But in the course of his argument Mr. Livingstone makes a supposition which is that his own application of the case goes much further than this. Imagine for a moment, he says, that we had never heard of the names of Greece and Rome. On this hypothesis he has no difficulty in proving that we should not know what sort of thing was that Greek urn which moved Keats to say that the key to much of our own language would have disappeared, that darkness would descend upon the origins of nearly all our civilisation, and that such in Christianity itself, including the doctrine of the Logos, would become obscure. All this is incontestably true, and is conclusive against the idea, which no one out of Bedlam would entertain, that the classics should be deleted from school and university curriculum; but it is not conclusive against the idea that a non-classical education is conceivable which would enable its possessor to read with intelligence Burke, his Shakespeare, his Milton, and his Keats. He need not have toiled at the Greek and Latin languages in order to know enough about Greece and Rome for that purpose.

It's tacit but persistent refusal to acknowledge that a non-classical person may yet claim to know something worth knowing about the history and politics of Greece and Rome sometimes leads our author into positions which obviously call for revision. "Latin," says, "stands in our education partly on linguistic grounds, partly on the heroic characters in its history [the history of what? of the Latin language or of the Roman people?], on the interest of its political and social problems, and on the capacities of its people for government." Of course, no one is going to pretend that the non-classical reader's knowledge of Greece and Rome can stand comparison with what knowledge might have been if he had been classically trained. But the great question is whether in a general education all the advantages of a classical training must be sacrificed because Greek and Latin are not included in the curriculum.

Similarly, it would be stupid to argue that translations, even the best of them, can give what the originals can give. True, it is much to admit, as Mr. Livingstone does, that "North's translation of Plutarch is more delightful than the late Greek of the original"; that "Aristotle can be read with profit in a translation, though the reader will often want to refer to the Greek"; that "the thought of Plato can be better expressed in Jowett's excellent English"; and that "Thucydides, of all the great writers suffers probably least by translation." On the other hand, it must at once be admitted that, as one is justified in saying that Shakespeare and Milton, Ruskin and Carlyle are untranslatable, so Mr. Livingstone is justified in saying that Eschylus's genius has percolated into Morshead's excellent translations, and that "even Prof. Morshead's translations of Euripides, works of genius, succeed in bringing the original under our eyes."

A scholar who turns to the Greek of an accomplished scholar "feels himself in another world." That is an excellent reason for maintaining the supply of accomplished scholars. It is no reason at all for thrusting the Greek accidence down the throats of all who wish to enter Oxford or Cambridge.

Yet that is what Mr. Livingstone claims, and with the claim we must connect his unfortunate classification of youth as small boys, laggards, drudges, and lotus-eaters. Many of his laggards and dunces might exhibit themselves in a very different light if they were set to tasks very different from that of grinding at Greek grammar. He admits that compulsory Greek is "hard on boys who wish to go to the universities and have no aptitude for Greek," and that in their case "it is a prostitution of a great subject." Yet he sees no other method of keeping alive the study of Greek, at any rate in the local grammar and secondary schools. But it seems certain that some other method will have to be found, for this kind of reasoning is a stone of stumbling to many people besides those who are filled with the spirit of commercialism. It is too much like the reasoning of the stern disciplinarian who flogged all his boys at nine o'clock, on the ground that some of them would infallibly deserve their flogging before the end of the day. Is it, after all, a wild suggestion that, supposing Latin to be retained as a compulsory subject up to the age of sixteen, it should not then be beyond the wit of the schoolmaster to pick out those boys who would profit by an extended classical education, and who are probably marked out for a classical career at the university?

To sum up. Though no one should go to Mr. Livingstone for a real and sympathetic understanding of the classical controversy as it affects small boys and his so-called laggards, yet anyone who entertains even a lingering doubt of the high importance, for the intellectual and spiritual life of the nation, of maintaining the traditions of sound classical scholarship would certainly do well to sit for a few hours at Mr. Livingstone's feet.

T. RAYMONT.

### "FINIS CORONAT OPUS."

*The Cambridge History of English Literature.* Vol. xiii., 611 pp. Vol. xiv., 658 pp. (Cambridge University Press.) 9s. each.

The concluding volumes of the great "Cambridge History of English Literature" now lie before us; for, although we have been promised extra volumes that will deal with illustrative matter and with American literature, yet the work as regards our own country is done and the farewell said. It is a graceful and restrained farewell, and we quote the almost opening words: "To Shakespeare's memory we would fain offer this work as a tribute of reverence and recognition. Whether the tercentenary of his death will close before the country in which he took pride, and its sister lands, have completed the sacrifice offered by them, neither with a light heart nor for ignoble ends, is hidden from our eyes; but, alike in war and in peace, the creations of his genius form part of the inheritance of which it behoves our nation and our Empire to remain worthy."

The preface to the whole work, written in 1907, contains words of thanks to many scholars whose labours aided in the preparation of the history; some of these are now dead, and the farewell quoted above, and written in April, 1916, cannot reach them. But our thanks may respectfully be given to the great army of writers who, beginning with Dr. Waller and ending with Prof. Murison, have written what may be described as individual monographs permeated with one spirit. Scarcely anything, except the sub-literary,

subterraneous work on the influence of which no writer has yet touched, has been omitted, and though we may object to the division of space whereby a Francis Thompson is dismissed in a page, while Bailey's "Festus" and Tupper are allowed three pages each (not that we would group the two together), yet the reader always has at hand the incomparable bibliographies, to which again and again we have directed attention.

The two last volumes still deal with the nineteenth century, taking up the story where vol. xii. left it. They are preceded by an apology for the absence of any criticism on Henry James, for whose death neither editors nor readers were prepared. Tennyson, the Brownings, Carlyle, Thackeray, Dickens, the Brontës, and, in quaint juxtaposition, Meredith, Samuel Butler, and George Gissing, take up the greater part of the book, and along with other well-known names we find drama, prosody, and the nineteenth-century political and social novel treated in full. For all his admiration, Prof. Saintsbury does not get at the secret of Dickens. Dickens's errors are again and again insisted on, but his secret escapes. It is the same with such very different writers as Anthony Trollope and Christina Rossetti; each had a secret, but to the critic in these volumes the secret seems unknown. On the other hand, we have luminous pages on that most difficult novel, "Wuthering Heights," and—tell it not in the lecture-rooms of Girton or Oxford—there is an appreciative page—in one volume—on the "Lays of Ancient Rome." George Eliot receives rather more, and George Meredith rather less, eulogy than the official classroom which does so much harm in our schools would countenance.

It is impossible to notice, even by name, more than a monograph or two; we find, of course, an occasional contradiction in theory, if not in fact, and it is well for the general reader to be told on one page that genius is evolutional, like all else, and on another that we know not when, how, or why it comes, but we may be certain of this, that it owes nothing to anything that we can see. The fourteenth volume parts company with special names, and gathers up such subjects as philosophy, history, journalism, caricature, travel, and the literature of science. And with chapters on the literature of our Dependencies and Dominions the book ends. That is, the book proper ends, for a chapter on education and a chapter on the changes in the language since Shakespeare's time are added. The full bibliographies and indexes follow, and the inevitable errata bring up the rear. Our own modest correction of an error in vol. ii., p. 457—a rather bad error for a learned book—has been overlooked.

May we end with a wish, expressed before, that when the editors and publishers again bind these admirable volumes they will choose some colour that will not turn sickly pale before the ordinary light that visits our shores?

### A WAR STORY.

*The Flight of Mariette.* By Gertrude E. M. Vaughan. xvi+147 pp. (Chapman and Hall.) 3s. 6d. net.

This is a poignant and moving story of the early days of the war in Belgium, and particularly of the siege of Antwerp and the flight of its inhabitants. The story is told in the form of extracts from a diary kept by Mariette, a Belgian girl, twenty years of age at the outbreak of hostilities. She is one of a family of five, the other members being her grandparents (both nearly ninety years of age), her foster-brother and her girl cousin (both about the same age

as herself). The first extract from the diary is dated January, 1912, and it is followed by a number of others at irregular intervals of time, by means of which a vivid and intimate picture is given of the happy, peaceful, uneventful life of a Belgian middle-class household in the years immediately preceding the catastrophe. Then comes the tragedy of the German invasion, and one is made to realise from the Belgian point of view the monstrous villainy of the German breach of faith in the violation of Belgium's guaranteed neutrality. The war is depicted as drawing nearer and nearer to Antwerp, and touching accounts are given of the departure of the devoted troops to their awful ordeal, of the return of the wounded, of the scenes in the hospitals, and of the burial of the dead. Finally, Antwerp itself is attacked. The diary becomes particularly full and detailed in the section that relates the writer's experience of the siege.

The account of the events of the dreadful days of October, 1914, is so precise and circumstantial that it is difficult to believe that it is anything else than the narrative of an eye-witness. An impression of the horror of the bombardment, in which 800 houses were destroyed and 1,200 injured, is most vividly conveyed. When the situation in Antwerp becomes intolerable Mariette and the old folk, who have clung to their home to the last limit of endurance, are compelled to take to flight. The story of their journey on foot in company with others related to them, is a story of sorrow and hardship beyond imagination.

From whatever sources Miss Vaughan has got her materials, she has produced a narrative of quite remarkable verisimilitude and power. One feels that it is a true mirror of reality. It provides a picture of the doings of the Germans in the days of their confidence, which should be placed before the eyes of all those falsely humanitarian sentimentalists who think that peace should be made with the perpetrators of these appalling barbarities before extremest punishment and completest reparation have been secured. Ultimately the refugees reach England and find safety in a strange land. The inconclusive ending of the story effectively suggests the tragedy of Belgium's broken history and the ruined lives of its unhappy peoples. Miss Vaughan has produced a notable and unforgettable book.

### RECENT SCHOOL BOOKS AND APPARATUS.

#### Modern Languages.

*Sur le Front. War Stories.* Selected by Jetta S. Wolff, edited by A. S. Tréves. vii+110 pp. (Arnold.) 1s. 3d.—This attractive volume contains sixteen short stories, of which five are by Frédéric Boutet, six by J. H. Rosny Ainé, and five by Pierre Valdagne. They make excellent reading, and will show our pupils something of the life of the *poilu* and of the way in which the war reacts on those at home. Pathos and humour are well represented, and the literary quality is high. "Sur le Front" will serve admirably the purpose of rapid reading. All difficulties, including a good deal of current *argot*, are explained (in French) in the notes. There is also a French-English vocabulary, which many teachers will regard as a drawback the publishers would be well advised to issue an alternative edition without it.

*Légendes de Noël. Contes historiques.* Par G. Lenôtre. 247 pp. (Dent.) 1s. net.—The "Collection Gallia" grows apace; it now numbers some twenty-five volumes, clearly printed and well bound. They are as a rule intended for the general reader rather

for the schoolroom, but we welcome the present volume as eminently suitable for inclusion in the school library. These fourteen historical tales are dedicated "À Geneviève et à Thérèse"; we cannot refrain from quoting the charming words of the dedication—"Pour vous, mes chères petites, ont été écrits ces contes—qui ne sont que des contes. Si cela les éclaire quelque reflet de l'épopée française, j'ai voulu ainsi dans l'espérance que la lecture de ces contes vous donnerait, à l'âge où l'on ne s'amuse plus belle que toutes les légendes et plus amusante que toutes les fictions." The style is simple, and our boys and girls will read these tales with delight.

*L'histoire de Peter Pan.* Par D. O'Connor. Traduction de M. Ceppi. ix+105 pp. (Bell.) 1s. 6d.—Mr. O'Connor's story, based on the famous play illustrated by Miss Woodward, is here told in French. According to the preface this has been done to the benefit of French children; but the inclusion of questions in French based on the pictures and of a French-English vocabulary suggests that the book is intended for use in our schools. Whether such a characteristically English story is really suitable for its purpose may be doubted by some; but others will find it as intrinsically attractive to our children as they will not hesitate to let their pupils read it, many rate out of class.

*Black's First German Book: Phonetic Transcription of the First Thirty Lessons.* By L. H. Althaus. 177 pp. (Black.) 1s. 6d.—There are "lesson notes" to this book but the text also contains a large number of directions for the teacher, which are not expressed in impeccable German, e.g., "mit schlechtem j," "das Diktat ist von der Klasse erwartet zu werden," "Farben dastellend," "was erscheint kommt." The transcription is generally good, but there are a good number of misprints, some of the statements are scarcely correct; the final stop does not precede each stressed vowel at the beginning of a syllable (e.g. "Theater"), and the ending of "j" cannot be called "Summen," which is the "buzzing" of the vocal chords. On the whole we doubt whether our pupils require, or can profit by the time for, so much phonetic work in German. Presumably they have had practice in English French sounds, and the German spelling represents the sounds of that language tolerably well.

### Classics.

*Roman Life and Customs.* A Latin reader. By A. A. Beresford and E. C. Smith. 104 pp. 2s. 6d.—Anyone who examines the Latin books published during recent years will notice a desire to provide something more suitable, both for themselves and to efficient teaching, than the old thing upon which our own generation was reared. The present volume is undoubtedly a product of that desire; but the authors have not realised the essential connection between "efficient teaching" and "suitability of presentation to boys." Directly teachers have, to judge from some of their remarks, realised this, and we think that the present volume might with profit have adopted this idea. As it is, they have produced a book, excellently illustrated, which is a veritable mine of information on Roman life; but little effort is made to engage the interest of a boy. We are told how the Romans dressed themselves, how they ate their dinners, married their wives and buried their parents—in fact, all that could possibly wish to know; but there is nothing in the book to produce in a boy the desire of that

knowledge. In a word, boys will find it dull, and that is the greatest possible demerit of a school reader. Incidentally, the marking of quantities has been carelessly done.

*Flosculi Rossallenses.* viii+255 pp. (Cambridge University Press.) 7s. 6d. net.—This is a volume of "versions" (Latin and Greek, both prose and verse) done by scholars, many of them now first-rate authorities on different aspects of classical learning, who were pupils at Rossall during the last half-century. It is not only a grateful tribute to Rossall, but a volume full of pleasure for any scholar's idle hour. It should also be useful to schoolmasters; most of them have their own "versions," of course, but he who cannot find a gem to steal from here must have an unusually good stock.

### English.

*The Rudiments of Criticism.* By E. A. G. Lamborn. 191 pp. (Clarendon Press.) 2s. 6d.—The more that we have of these little books the better. The writer is an enthusiast who has felt his own sense of poetry reflected in the eyes of his classes, and to such a man the critics may talk until they are tired. Not that the critics will talk to him; their audience is esoteric. His own contention, that poetry is music, is contradicted by himself again and again, but the enthusiast does not set much store on consistency. Thus, even in scansion Mr. Lamborn condemns the application of classical prosody and its rules to English verse, but he still uses the short and long marks for syllables that know them not. It is, we think, a pity that the writer should have followed the practice of adding certain poems written by his young friends; we should rather have had more of Mr. Lamborn, for his judgments, if somewhat hurried, are always refreshing, and the root of the matter is in him. He believes that children will see, and will wish to see, beauty in literature if the school does not prevent it, and thus for the teacher his book is no unsuitable pendant to the *Ultimates of Belief*, of which we have heard so much lately.

*English Prose Extracts for Repetition.* Selected by E. H. Blakeney. 53 pp. (Blackie.) 8d.—The idea in this booklet is well worth following up, for though there have been admirable collections of ediscenda in prose, such as Mrs. Barnett's "Little Book of Prose" and Leonard's "Pageant of English Prose," these larger works are not intended for repetition. Mr. Blakeney believes in the repetition of prose, and when schoolmasters as a whole believe in it their main difficulties in regard to composition will be greatly lessened. This book goes into any pocket.

*Selections from the Prose of Macaulay.* Edited by L. H. Holt. 454 pp. (Ginn.) 5s. 6d.—The editor explains the omission of any extracts from the speeches on the ground that they are mainly intended for oral expression. This might almost be said of any of Macaulay's work; and, indeed, he is an author to be read aloud in schools. To make up for the want of his oratory we have a good deal from the "History," and an excellent preface has been added; as a rule the people at school are not treated to such good prefaces. The essayist is not slavishly defended against the accusations that have always followed him; the scales are held fairly. Probably much more might be made of Macaulay's patriotism; it was with him a daily passion.

*The English Journal.* November and December, 1916. (Chicago University Press.)—Amongst the interesting papers in these two numbers is the suggestion, apparently not at all new, that English composi-

tion may be judged and marked mathematically, just as in the *Hibbert Journal* we find a statement of religion in mathematical terms. As mathematics can scarcely be "humanised," can it be that the humanities are seeking the aid of accuracy? It is a pity for us Westerners that the standard so freely referred to is not more fully explained. The second paper is an inquiry into the causes which are banishing the "Pilgrim's Progress" from the schools and post-nurseries as a reading book. In England, of course, the schools are afraid of any religious book except the Bible, but there does not seem to be any objection to a school edition which should omit the more didactic portions of the dialogue while preserving the wonderful beauty of the description and of character. Probably the fate of the celebrated allegory will be that of its less popular but more scholarly fellow, Law's "*Serious Call*." Both will always be required by the student of English history and literature, and both will always find enthusiastic admirers. It seems irreverent to suggest that if a new Law and a new Tinker could arise new stories might be written; the "*Call*" and the "*Progress*" are as insistent as ever. Other papers on the school stage, on Stratford in time of war, and on themes for engineering students are full of interest. Reference continues to be made to the subject of the improvement of American speech; and once more we plead for a cheap reprint, if such a thing were allowed by the publishers, of Henry James's lecture on this important subject.

#### History.

*Early European Civilisation: a Textbook for Secondary Schools.* By R. L. Ashley. xxii+708 pp. (New York: The Macmillan Co.) 6s. 6d. net.—We recently noticed Mr. Ashley's useful handbook on Medieval Civilisation. On the present occasion, therefore, we need do little more than say that the volume before us includes the volume on Medieval Civilisation, together with a preliminary account of Ancient Civilisation. This preliminary section deals with prehistoric man, with the early polities in the Near and Middle East, with the Hellenic world, and with the Empire of Rome. It omits most of the familiar political and constitutional narrative, and provides supplementary information concerning social, economic, and intellectual development. The book is well illustrated and amply equipped with maps.

*Abraham Lincoln.* By Edith L. Elias. 192 pp. (Harrap.) 1s. 3d.—This little volume forms a welcome addition to Messrs. Harrap and Co.'s "Heroes of All Time" series. It divides the career of the famous President into seven periods, and gives a vivid and interesting sketch of his remarkably varied and eventful life. At the present moment it is particularly useful to have so noble and forceful a character as that of Lincoln held up for admiration and imitation, both here and in America.

*The Towns of Roman Britain.* By J. O. Bevan. viii+66 pp. (Chapman and Hall.) 2s. 6d. net.—This convenient little handbook contains a brief sketch of the Roman occupation of Britain, a discussion of the permanent effects of the Roman rule, and then a descriptive list of the thirty-seven Roman settlements to which the term "town" can be properly applied. The texture of the book is exceedingly slight, and those who come to it for any detailed information about any particular locality will be disappointed. But it will be serviceable to all who wish to make a quick preliminary survey of a large and fascinating theme.

*The History Teacher's Magazine.* Vol. vii., Nos. 7-10, September-December, 1916. (Philadelphia, U.S.A.) 20 cents each.—The four parts before us

complete the seventh year of issue of this valuable American historical magazine. The September number is confined to matters interesting to teachers in the New World. One of its articles, namely, that on "The Historian and Statehood Centennials," serves to remind us that America is developing a novel language which will soon require translation into English. The leading article in the October issue is by Prof. McLaughlin on "Teaching War and Peace." It embodies a passionate protest against the view that any war between civilised nations has ever been "inevitable." To the November part Prof. Humphrey contributes an essay on "Geographical versus Sequential History." It is full of acute criticism and learning. Its main appeal to teachers is that they should "break the tyranny of chronology," and should treat history as a collection of problems to which geography furnishes one of the most important keys. In the December issue Prof. Anderson writes on "The World War and the Historians." He considers that historians prior to 1914 failed conspicuously in that they had not elucidated the tendencies (now so obvious) which were leading Europe towards the great conflict. He urges them to consider the causes of their blindness, and to change their conception of their subject in order that they may become better guides and wisest prophets in the future. For his own part he regards the war as the natural outcome of Bismarckism at "the method by which German unity was brought about."

#### Geography.

*Macmillan's Graphic Geographies: The British Isles.* By B. C. Wallis. 32 pp. 9d.—This book contains twenty-five lessons suitable for junior form. Each lesson consists of a carefully written description followed by exercises for revision. The headings of the various chapters (such as "The County People," "Workers in Factories," "Traders by Sea," etc., others) show that Mr. Wallis intended to emphasise the human note in the geography of the British Isles, and in this he has been particularly successful. The essential features of the lessons are indicated on a series of twenty-four clearly drawn maps, which add greatly to the usefulness of the text. Four colour geographical maps are also provided.

Among the exercises certain types of questions are of doubtful value; of these, the following examples may be given:—(a) "Name the railway lines, etc. (p. 22); in such cases the names of railway companies which are of no geographical importance, are presumably asked for. (b) "Make a list of the Irish bays (p. 21); this implies mere copying from a map and does not require any thought on the part of the pupil. (c) "By what port would Swedish pit-props reach Britain on their way to Lanarkshire collieries? (p. 25); a question that needs a single word for the answer encourages guessing: at least one line explanation should be insisted upon.

*Macmillan's Geographical Exercise Books. (Key to the British Empire. (b) Key to the Americas.)* By B. C. Wallis. 2s. 6d. each.—These books will prove of great use to the teacher when marking his pupils' exercises, as they supply (a) brief answers to the questions requiring them, and (b) a series of marks on which the necessary facts are entered with clearness and distinctiveness.

*The Western Front at a Glance.* (Philip.) 1s. net in cloth, with index.—This little book contains forty-eight page maps, 7 in. x 4 in., which cover the whole of the Western front, from Ostend to Belfast, in twenty-eight sections. The scale varies from twelve to thirteen inches to the mile; spot heights are given.

metres; railways, roads, canals, and woods are indicated. It is possible to indicate buildings in blocks and to insert the small streams. The slopes are indicated through hachures, and the roads are shown in two cases. Altogether this is a handy and useful publication.

*Days of Travel Series. Adventures in Polar Seas.* 12 pp. *Travel in the British Empire.* 175 pp. By J. W. Oates. (Harrap.) 1s. 3d. each.—In the first of these interesting readers Mr. Oates tells the story of the gradual conquest of the poles by references to the work of Hudson, Ross, Franklin, Kane, Nansen, Shackleton, Peary, Amundsen, and Scott. The second gives an account of the various parts of the Empire in connection with the work of the great explorers and Empire-builders; in many cases the text contains quotations from notable books—for example, man is practically responsible for the chapter dealing with the exploration of the St. Lawrence, and so of that entitled "The Discovery of New South Wales" is taken from Cook's "Voyages." These books should find a place in the geographical library.

### Science and Technology.

*Nights at a Glance: A Handy Sky Guide on Novel Lines.* 48 pp. (Philip.) 1s. net.—The northern and southern aspects of the night sky are shown for each month on a series of charts upon which stars of the five magnitudes are represented clearly. With the aid of these charts, and of a calendar-index to them, it will be easy for anyone to become familiar with the constellations, and to use conspicuous stars in order to find their bearing when a compass is not available. A boldly printed compass-card showing the center-points is reproduced on the inside covers for use in conjunction with the plates, depicting respectively the northern and southern aspects of the heavens. There are notes on the constellations and principal stars, and the little book as a whole forms a compact and handy guide to the heavens.

*The High School Cookery Book.* By Grace Bradshaw. With preface by Sara A. Burstall. vi+266 pp. (Longmans.) 2s. 6d.—Instruction in cookery in ordinary schools for girls is given under difficulties which vary from school to school. In some cases the work is taken up in the lower and middle Forms by girls of thirteen and fourteen years of age, who have had little opportunity of carrying their work in science enough to be of assistance to them in the kitchen. In other schools cookery is postponed until the girls have reached a high Form, and then the preparation for external examinations makes it difficult to find time enough for serious work in the subject. This question of allowing sufficient time for practical work in the kitchen is, in fact, one of the greatest problems which confront the headmistress who wishes to introduce systematic instruction in the domestic arts. In writing this book, Miss Bradshaw seems rather to have overlooked these difficulties. Her treatment of the subject is too comprehensive for the conditions existing in most schools, and it is to be regretted that guidance is given in the direction of indicating times of work possible, say, for two years by girls with an hour and a half available for about thirty-nine weeks in the year, and for other equally usual allocations of time. We have nothing but praise for the practical instruction provided, and for the constant appeal to common sense. A little more guidance to those mistresses anxious to make their laboratory assist later work in cookery would have been

### Miscellaneous.

*I Sometimes Think. Essays for the Young People.* By Stephen Paget. ix+155 pp. (Macmillan.) 5s. net.—When Mr. Paget thinks, he thinks to good purpose. We have read these essays with pleasure, and some we have re-read several times. Their gentle helpfulness stimulates and engenders a desire to be better and do better. The world seems a happier and more beautiful place after one has followed Mr. Paget's lead a little way. The essays on "Unnatural Selection" and "The Next Few Years" pleased us most, but we hope many young people will study them all. We suspect, however, they will make their strongest appeal to the young in heart among us, and not to those whose years in the land have been few. The short dedication is a gem.

## EDUCATIONAL BOOKS PUBLISHED DURING DECEMBER, 1916.

(Compiled from information provided by the publishers.)

### Classics.

"*Flosculi Rossallenses: Greek and Latin Compositions by Scholars of Rossall School.*" viii+256 pp. (Cambridge University Press.) 7s. 6d. net.

### History.

"*Towns of Roman Britain.*" By the Rev. J. O. Bevan. 66 pp. (Chapman and Hall.) 2s. 6d. net.

"*Select Treaties and Documents, to Illustrate the Development of the Modern European State System, 1815-1916.*" By R. B. Mowat. Enlarged edition. 210 pp. (Clarendon Press.) 2s. net.

"*A Short History of Australia.*" By E. Scott. 383 pp. (Oxford University Press.) 3s. 6d.

### Mathematics.

"*Housecraft Arithmetic.*" By Theodora Mellor and Hilda H. Pearson. 112 pp. 1s. 6d. With Answers, 134 pp. 2s. (Longmans.)

"*Elements of Analytical Geometry.*" By Prof. A. Ziwieth and L. A. Hopkins. viii+280 pp. (Macmillan.) 7s. net.

"*The Supervision of Arithmetic.*" By W. A. Jessup and L. D. Goffman. vi+225 pp. (Macmillan.) 5s. net.

### Science and Technology.

"*Propagation of Tree Fruits.*" By B. S. Brown. 184 pp. (Chapman and Hall.) 5s. 6d. net.

"*Farm Forestry.*" By J. A. Ferguson. 240 pp. (Chapman and Hall.) 5s. 6d. net.

"*Plain and Ornamental Forging.*" By E. Schwarzkopf. 267 pp. (Chapman and Hall.) 6s. 6d. net.

"*Histology of Medicinal Plants.*" By Dr. W. Mansfield. 305 pp. (Chapman and Hall.) 12s. 6d. net.

"*Drawing for Builders.*" By R. B. Dale. 166 pp. (Chapman and Hall.) 6s. 6d. net.

"*Laboratory Manual of Organic Chemistry for Medical Students.*" By Dr. M. Steele. 201 pp. (Chapman and Hall.) 5s. 6d. net.

"*Lessons in Pharmaceutical Latin and Prescription Writing and Interpretation.*" By H. C. Muldoon. 180 pp. (Chapman and Hall.) 5s. 6d. net.

"*The High School Cookery Book.*" By Grace Bradshaw. 272 pp. (Longmans.) 3s.

"*Text-Book of Organic Chemistry for Students of Medicine and Biology.*" By Dr. E. V. McCollum. xiv+426 pp. (Macmillan.) 10s. net.

"*Text-Book of Botany for Colleges.*" By Dr. W. F. Ganong. xii+402 pp. (Macmillan.) 8s. 6d. net.

**Pedagogy.**

"A Defence of Classical Education." By R. W. Livingstone. xii+278 pp. (Macmillan.) 4s. 6d. net.  
 "History of Education in Virginia." By Prof. C. J. Heatwole. xviii+382 pp. (Macmillan.) 5s. 6d. net.

**Miscellaneous.**

"Cambridge Manuals of Science and Literature":—  
 "The Evolution of Coinage." By George Macdonald. viii+148 pp. "The Old Grammar Schools." By Foster Watson. viii+150 pp. "The Printed Book." By Harry G. Aldis. viii+154 pp. "Australia." By J. W. Gregory. viii+156 pp. (Cambridge University Press.) Cloth, 1s. 3d. net each; leather, 2s. 6d. net each.

"The Disciples of Christ." By M. Winnington Ingram. 112 pp. (Longmans.) 1s. 6d. net.

**CORRESPONDENCE.**

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

**A Defect in Education.**

MR. CHARLES raises questions of great importance in his letter in the January issue of THE SCHOOL WORLD. If we judge alone by the number of questions asked, it certainly seems to be true that the desire for knowledge which most children show at the nursery age wanes by the time they are old enough to leave school. But are we right in supposing that because there is so much less asking of questions on the part of adolescents they feel less real interest? Is it not conceivable that interest is manifested in different ways at various ages? The mind of the boy or girl of seventeen is less easily fathomed than that of the child of five or six. The risk of appearing ignorant or stupid is probably quite enough to cause the youths to leave unasked many of the questions which arise in their minds. Moreover, the acquaintance with books and their knowledge of the scientific method may lead our pupils to answer the questions which occur to them by a research with the aid of works of reference. Far from there being the absence of any capacity to learn described by Mr. Charles, the decreasing frequency of questions addressed to adults may mean that our boys and girls are developing self-initiative and learning to seek from first-hand sources the solution of their difficulties.

Nor, surely, are we sufficiently justified in thinking of attendance at school as the direct cause of the observed diminution in the number of the questions asked by older boys and girls. Is there any evidence to show that children educated at home by private tutors exhibit an orally expressed thirst for knowledge to be compared with the clamorous curiosity of youngsters in the nursery and to be contrasted with the taciturn indifference of the school products?

In reply to the first of the questions Mr. Charles says teachers will do well to answer; for myself I must say, therefore, I think we have far too few grounds to justify any of the sweeping assertions that children leave school (1) uninterested; (2) without any desire to know; and (3) without any capacity to learn.

But though I have to some extent to join issue with Mr. Charles on his preliminary allegations, some of the implications of his later questions appear to me to deserve serious attention. His suggestions (a) that children do too little for themselves and have to listen to too much, and (b) that too many subjects are introduced into the secondary-school curriculum, are likely to meet with general approval.

But we may admit that a child learns best by doing and yet be guilty, as too many teachers are, of setting our pupils to do silly and futile things, which, instead of encouraging intelligent interest, lead either to boredom or to monkey-like agility in the performance of tricks. The chief thing is learning, and the doing must be a means to that end. To be sure that children are doing suitable things which will lead to learning postulates a good, reasonably trained teacher; and to get and keep such a teacher means the payment of him of a reasonable salary. Or, as is the conclusion when nearly every educational question is probed, efficient education can only be secured if we are prepared to pay properly for it.

The number of subjects to which young children are introduced in most secondary schools may very well make it impossible for them to become interested in any of them. So long as there are schools professing to teach a subject when they can allot to it only a single period of forty-five minutes per week, so long as it is possible for boys and girls to begin a subject in one Form and after a few months to drop it entirely after promotion to the next Form, so long will it be natural to find children uninterested in learning, because the previous experience has been a series of beginning of new things and of completing little or nothing.

I hope Mr. Charles will call forth expressions of opinion from other workers in education.

A. T. S.

**War Work for Women Teachers.**

THE Women's Defence Relief Corps was able last year to put many people engaged in teaching in touch with farmers for work during their holidays. In particular students of several colleges, such as the Mary Grey College, and St. Katharine's, Tottenham, were sent into the country for work of this kind.

The work of such women, used to routine and concentration, proved most satisfactory. They had grit, they made light of discomfort, and they found the outdoor life invigorating after the confinement of the schoolroom.

More women will be needed on the land this year and we should like to organise our parties in readiness for the rush. It is foolish to leave things until the last moment. We should be greatly obliged if you could let your readers know that anyone willing to help with the crops should write, enclosing stamped addressed envelope, to Miss Myers, organiser "Studio," 10 Abbey Road, London, N.W.

At the request of the President of the Board of Agriculture, we work in conjunction with the W.N.L.S. Corps. We always send a visiting organiser to inspect the accommodation offered, and we insist on a living wage.

C. A. DAWSON SCOTT.

**The School World.**

**A Monthly Magazine of Educational Work and Progress.**

**EDITORIAL AND PUBLISHING OFFICES.**

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 219.

MARCH, 1917.

SIXPENCE.

## THE CARE OF THE EYES OF SCHOOL CHILDREN.

By N. BISHOP HARMAN, M.A., M.B. Cantab.,  
F.R.C.S. Eng.

Ophthalmic Surgeon to the West London Hospital  
and to the Belgrave Hospital for Children.

### I.

MAN lives by his eyes. He relies upon his sight more than upon any other of his senses. The form, the colour, the size, and the distance of objects are all measures that he is constantly taking by means of his eyes. In the chase the food of the man, in war the life of the man, each depends on the keenness of his sight. In peace we fill our memories with living pictures; and remembrance is the revivifying of pictures once seen by our eyes or the pictures conceived by an imagination fed upon visual impressions. The value of eyesight is immeasurable, and the words of the Bible comparing the most conserved treasure to the "apple of the eye" is no mean hint of the truth.

It is worth while noting that the first step in the work which we now call "school hygiene" was taken by an English eye surgeon; he was concerned with the effects of school work on the eyes of the children. So we do well to keep a "sharp eye" on the eyes of our charges. They are the most precious of the sense-organs of the child; we can teach them more through their eyes than by any other means, and if we are careless we may make the children suffer through their eyes more acutely, and certainly in a more dangerous fashion, than could be done by any "corporal punishment."

In these articles I shall deal with three leading types of defect of the eyes: First, certain diseases that attack the front of the eyes, and are in the same category as measles, since they are contagious affections; secondly, eye-strain; thirdly, some special

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defects, such as squint, short-sight, and word-blindness.

### "SORE EYES."

No teacher likes to have a child with sore eyes in class. If asked the reason for the dislike, the reply may be that the eyes look nasty. Probably there is a deeper reason than aesthetics. If you go into any good-class school, where there are only well-cared-for children, it is almost certain that you will not find one child throughout the school with sore eyes. If you go into a poor school, where there are many poorly kept and dirty children, you will certainly find several children with sore eyes. The real reason why we dislike sore eyes comes from an instinctive recognition that the thing is dirty.

That this feeling is a true one can be proved by figures. A few years ago I made a detailed examination of the eyes of several thousand children in one quarter of London. At the end of the examination it occurred to me to group the schools according to the general impression of cleanliness and so forth of the districts in which they were situated, and ascertain what, if any, differences were exhibited in the schools so grouped. In thirty schools examined the children of thirteen were classed as of fair average cleanliness, three above average, and fourteen below average. The proportion of sore-eye cases was as follows:—

Cleanliness.	Cases of disease amongst children.	Percentage.
Above average ... ...	19 in 2,174	0·873
Average ... ...	134 in 9,463	1·416
Below average ... ...	107 in 10,216	1·02
Total ... ...	350 in 21,893	1·6

Cases of disease were more than twice as frequent in the dirty schools as in the clean.

Similarly, a comparison was made amongst the native and alien patients attending one of the London eye hospitals. The ratio of attendance of natives to aliens was as 3·5 to 1. But the cases of sore eyelids, just one type of

G

disease, amongst the poor, ill-kept aliens, mostly recent immigrants, were actually one-third more numerous than amongst the greatly superior number of natives, or in a ratio of 5 to 4. This is ever so. Dirt and disease go hand in hand. If we wish to check disease, preach cleanliness, for, in truth, "cleanliness is next to godliness."

"Sore eyes" covers several types of inflammation of the surface of the eyes. The commonest goes by the name of "blepharitis"—that is, an inflammation of the edges of the lids. Among the 350 children mentioned above, no fewer than 270 suffered from this inflammation. It is particularly a disease of childhood. The ratio of cases seen at the hospital clinic shows this: Infancy (to three years), 300; school age, 259; young adults, 45; adults, 10; elders, 2. After school years few cases are seen, and most of these are old and chronic which have lasted on from school-days. Taking the cases year by year, it is found that the greatest incidence is at the time the children first join school, at four years. Community of subjects, with the ready transference of microbes from child to child, may account for this. Perhaps eye-strain, induced by the first attempts at school work, may aggravate it, for we shall see how large an influence the use of the eyes exerts on the conditions of the eyelids.

To understand this disease something must be known of the structure of the eyelid margin which is attacked. The eyelid is a fold of skin the structure of which has been adapted to its special purpose. The soft downy hair of the skin is here stiffened and arranged in rows to protect the eye from dust. The grease glands which render the skin soft and smooth are here arranged in a row just behind the stiff hedge of the lashes and serve a double duty: first, to protect the edges of the lids from getting sore as they tap, tap against each other in their constant work of wiping the front of the eyeball; and, secondly, to waterproof the edges of the lids so as to prevent the overflow of tears on to the skin of the face. Both these functions are necessary to the security of the eyes and therefore of the sight. When there is blepharitis the grease glands are irritated, and the grease they produce is thin and watery, so that it no longer protects the edges of the lids, and its waterproofing qualities are lost.

To understand this disease, the teacher should examine a number of children. Every stage may be found in a single large school, if it be not of the cleanest class. In the earliest stage there is only a little dry, white, bran-like material fixed to the lashes, just like papers on a file. If such children be examined late in the day, or after a needlework lesson, it will

be found that the edges of the lids will be pink in hue instead of the normal yellowish-white. Later the reddening of the margins, "the weakness of the eyes," will be noticed all day long. There are redness, swelling, and tenderness of the edges, the lashes are crusted with dried secretion, and scabs form on the edges of the lids. Ulcers form under the crusts; the microbes penetrate into the roots of the lashes and kill them, so that the lashes fall out and are not replaced. The poor quality of grease supplied by the glands allows the tears to wet the eyelids and skin so that the soreness spreads on to the face. The end state is unsightly in the extreme, for the lid has a red pouting lip that is always wet and raw.

There are two main ways in which these cases begin. (1) They follow attacks of fevers to which children are very liable. Measles is a special offender. The fever causes an inflammation of the eyes, it spreads to the eyelids, and if scrupulous cleanliness be not maintained, the inflammation runs on into a chronic condition, which is further aggravated by the attendance of the child at school and the doing of lessons.

(2) Children with bad focus of the eyes are very liable to this disease. It may be started by an attack of measles, or it may come on so gradually that it is scarcely noticed, until some friend of the family, or the school doctor, remarks on the unnatural redness of the eyes of the child. When a child cannot see well, or when its eyes are tired, the eyes are rubbed very frequently, and blinking is excessive. The rubbing brings dirt to the eyelids, and the blinking makes the edges sore.

This leads us to the right treatment of blepharitis. Anyone can guess this from the preceding account of the disease. (1) Wash and be clean. (2) Have the eyes examined lest there be bad focus, needing correction by glasses. Clean the eyelids well and often, several times a day. Water containing a little carbonate of soda will remove all the crusts, for the soda makes a soap with the grease of the crusts. Then the lids should be dried, and anointed with a very little antiseptic ointment, for which the proper prescription for the particular case will be given by the doctor.

If the eyes do not see well then, there will always be liability to attacks of the disease; in a well-kept child it will never go to the unsightly stage of the poorer and dirty child, but, nevertheless, injury will be done to the eyelids, which may reduce the beauty of an otherwise good-looking child. Repeated attacks of even mild degree will cause the edges of the lids to get thick and heavy-looking, and the long, well-curved lashes will fall out, to be

replaced by thinner and shorter ones, and each successive crop will be poorer and weaker than the former. Spectacles are not ornaments, but they are things of beauty compared with the sore, red-edged lids of chronic blepharitis, and the wearing of them during school-days is little trouble compared with the saving of a well-tinted eyelid and the protection of the eyes which they afford.

#### PINK EYE.

This is another sort of sore eye; it does not affect the skin side of the eyelids, but the inner lining of the lids and that part of the lining which covers the visible surface of the eye-ball. This lining joins the eye-ball and the eyelids together, hence its name, "conjunctiva"; it is a very delicate membrane, and carries within it the blood-vessels and nerves of the surface of the eye. It is transparent, so that the signs of inflammation are easily seen. It has as many wrinkles and crannies as the linings of our coats, so that with its warm, moist surface and many recesses it forms an admirable breeding-place for microbes when once they get access to it. Happily, the provision of tears, and the constant cleansing action of the eyelids as they sweep across the eye with each blink, keep it free most of the days of our lives. Children are very liable to get infected eyes, probably because they are somewhat fond of dirt or grubbing in the dirt.

When a microbe gets access to the conjunctiva and causes it to be inflamed, "conjunctivitis" is set up. There are many types, according to the form of infecting microbe. An exceedingly common type is very contagious; it occurs in epidemics; the microbe producing it is very like that of influenza, and in many respects the epidemics of influenza and this conjunctivitis agree. The inflamed eyes are painful to look at, there is much blinking, light is hurtful to the eyes, and matter clogs the edges of the lashes.

If this matter be examined under the high powers of the microscope, it will be found to be made up of pus-cells, cells from the membrane of the eye, and large numbers of slender rods, which are the infecting microbes. The disease is spread by the direct conveyance of fragments of this matter from eye to eye. The girls kiss and pass it on; the boys wash their faces on the same towels and pass it on likewise. Such a disease as this emphasises the need for constant and scrupulous cleanliness. One of the first necessities for checking an outbreak in a school is the withdrawal of all the towels put out for use. That may seem an amazing proposition. But it is the right one. Towels for each or none at all is the only means of preventing the common use of

towels; used in common, towels are certain to spread the disease. Recently I had to investigate a severe epidemic in a large school run by a religious organisation. It was impossible to secure towels for all, so the issue of towels was stopped entirely. No child was to wash in the school; if it came dirty it was to go home to wash. The epidemic was stopped promptly in all except one class, that of the senior girls; there it continued despite all precautions. The flaw in the arrangement was an enigma, until the teacher of that class was examined as to what went on in the class. Then it was discovered that the girls were working for a prize needlework competition, and to secure the cleanest work she was in the habit of sending the girls to wash before commencing; since towels had been withdrawn she had given them a piece of "clean" linen to use. That piece of stuff went the round of the class, so there was no wonder that the plague was not stayed.

The lesson of this article is plain. Dirt and disease are wedded indissolubly. Banish dirt and you will also banish a host of diseases that thrive on dirt.

*(To be continued.)*

#### GIRLS' SCHOOLS IN THE NEW ERA.<sup>1</sup>

By SARA A. BURSTALL, M.A.

Headmistress of Manchester High School.

YOU are probably all aware that the periods after other wars have been marked by revival and reforms in education; Germany after Jena, France in the Napoleonic time and after 1870, we ourselves a century ago in the days after our earlier conflict against a militarist empire, all illustrate the process which has already begun in our nation to-day. Government committees, plans of reform, the issue of a weekly educational newspaper from a source ever ready to catch the breath of popular interest, are clear signs of the national mind. We within the girls' schools know well enough that the new era has dawned for them during these terrible years; we have already grappled with the problems, and it is thus that we are able, however imperfectly, to venture on some forecast as to the future. Our schools are full, over-full, everywhere: parents show a new keenness and anxiety about their daughters' progress; the universities are thronged with women students, notwithstanding the demand for women workers and the poverty of many cultivated homes: the number of entrants for scholarships and certificates has increased, and there is a new

<sup>1</sup> From an address to the Association of Assistant-mistresses on January 5th, 1917.

and forceful demand for universal free secondary and higher education. In a word, there is at last in England *power* to run our educational machinery, a belief in education, hitherto absent among us, but now comparable with that of Scotland, Switzerland, or America. This power is already, as we see, driving at a hitherto unknown rate the machinery of our girls' schools. Parents are full of anxiety to get their children into our schools, children too often wholly unprepared; they make the most touching and devoted sacrifices to keep their daughters at secondary schools and at college, and they realise as never before that these must grow up efficient, educated citizens, fit to take their part in reconstruction after the war. One cannot easily express what we all know and feel about the war-work now done by women, any more than we can trust ourselves to speak of the valour and the sufferings of our men. We think of our girls: in the hospitals, doctors as well as nurses and pharmacists and maids; in the canteens and the engine shops, the laboratories, the farms, the banks and offices, and Government departments. They have made good: they are there to stay. There will be room enough, work enough for them, and for men, too, for many years to come.

You and I serve in public secondary schools, but we must always remember that the mass of our people are educated in what many Lancashire folk call with perfect accuracy the public school—that is, the primary council school. Here, too, there is already obvious a new power, a new belief in education, as the programme of the W.E.A. shows. Opinion is general that the age for full-time education should be raised to fourteen with no exemptions whatever, that local authorities should have power to make the age fifteen (sixteen even is mentioned in some schemes), and that there should be compulsory part-time education from fourteen to seventeen (or even eighteen) for all employed young persons in the employer's time, with a further limitation of the hours of employment.

Even the more prejudiced among our farm-labourers are learning the need for instruction, like a Shropshire private I know who has been guarding German prisoners and cannot get over their superiority in education to the men of his own kind. Our upper classes, in many ways so akin to the primitive type of British workman, are also learning to believe that the nation must be educated after all, if we are to hold our place among nations in the future. This new and increased demand for primary, for part-time continuation, and for a greater provision of secondary and tech-

nical education will mean a literally enormous demand for teachers in the coming years, teachers who must largely be women. Our secondary schools will be called upon for a supply of such teachers, and a great part of our duty will be to provide the material. We must do all we can to induce the girls we can influence to enter our own profession—the teaching profession one and indivisible—the national service of defence against enemies within, as the Navy is the first line of defence against enemies without. It will be for others to improve the conditions of that service, not only as to pay and pension, but as to social recognition and professional freedom. What we have to do is to inspire our girls with the spirit of service, to make them realise that in teaching there is a peculiar satisfaction of their deepest needs. Medicine, social work, industrial research, business: these all will take care of themselves, and go on attracting aspirants, as they do to-day; but teaching will not.

As regards the girls' schools themselves in the new era, I venture to think no fundamental change will be needed, but there will be at least five ways in which reform must continue to develop. We must have better preparation before entrance, such preparation, at least, as is given in good primary schools; no waste of time in the school; greater care and consideration for the needs of the individual; an even fuller co-operation between the teacher and the school medical officer; and the more general adoption of vocational courses preparing directly for employment.

We are familiar already with all these points, and it may be well later somewhat to enlarge upon them. But not from any one subject of study or any one particular reform will our girls obtain the best the schools have to give. This is rather a life, a training, a tradition, a spirit, something impossible to describe, but easy enough to recognise in practice, something which comes by living the life of the school term after term, which we who are fortunate enough to have learnt can never forget. The new county schools have caught it; the new type of boarding-school has added new elements. It grows and changes, but is always the same. As a girl and a young mistress, I who now address you was privileged to know one of the founders of this tradition, Frances Mary Buss. She was a great woman, like a great mountain, like Mont Blanc from the Chamonix valley, near at hand overpowering, whose grandeur and supremacy are seen only from afar; as we look back over the years we wonder and admire the more, seeing what

near at hand all could not see, the truth and the wisdom of her principles. These principles are being justified all around us now: to fit girls to be useful in the world; to secure thoroughness and order and accuracy; to care for the average girl and raise her by devoted teaching to a standard she would never have reached alone; to open the doors of the university that women might enter all the treasure-houses of knowledge; to give oneself to one's work as did those heroes of Italian freedom whose story she so often told.

In the new era our discipline will come from the soul within rather than be imposed by rules from without; we shall teach new subjects, we shall differentiate and re-classify our pupils more and more; we shall have chemistry and engineering and commerce for our college girls; it will be our own heroes and martyrs whose stories we shall tell. But we shall seek to follow on our course in the spirit of the pioneers.

Turn now to the detail of reforms. First and foremost there must be better preparation of the girls before they enter; the state of things at present is to those who know a crying scandal. We find everywhere large numbers presenting themselves for admission who know practically nothing well. Time would fail to explain fully the how and the why of this marked deficiency, which is in certain districts as bad almost as it was a generation ago. In my own experience, both the best prepared and the worst are produced from each of the types of preparatory education, home teaching, the public elementary school, and the private school. "When they are good, they are very, very good," as the old adage has it; but each produces some examples which are "very, very horrid." The larger numbers of these sad cases of wasted years, years worse than wasted because habits of idleness and indiscipline have been formed and wrong instruction acquired, come from private schools, and not unnaturally, since the law allows any unqualified person to set up such a place. Parents, furthermore, have no means of knowing whether such a school is really efficient; constant change takes place in the personnel, and—most serious weakness of all—the fees paid are generally wholly inadequate to provide proper education in the absence of grants from public funds.

Many parents have no idea of the real cost of education, and could not afford it if they had; they should learn that in the public elementary school they will find a much better kind of education than any they can afford to pay for, and they should, as citizens, see to it that this public school is improved where it may fall short. For parents who

can pay high fees, all that is needed is some method of discrimination which would point out the excellent and efficient private preparatory schools that already exist, and encourage the foundation of others. Between these two sets of parents are many who can afford, and would prefer to pay, moderate fees, fees which would cover the cost of preparation, if the Government grant of £2 paid for the public elementary-school child were payable also for other children in efficient schools. It is a monstrous injustice to the middle-class parent that he can get no help in the education of young children from the State whose taxes he so largely pays, if he prefers to send his child elsewhere than to the public elementary school.

Secondly, we must avoid waste and improve methods in our schools. They are not perfect, as we know. The old gibe is still in part true that the mistresses learn the lessons and say them to the girls. The new examination schemes under Circular 849 will, let us hope, somewhat relieve the temptation to do this. Schools will present their own syllabuses and the school record will be taken into account. But something more fundamental is needed in the school: we must have more individual work and more co-operative work. We must get rid of competition, and form our classes into groups to work together. Private study in a school library is, of course, according to Montessori principles. Much more might be done in all subjects of a secondary education by mistresses who had studied Montessori methods in the infant school, to let girls work by themselves at what they wanted to do. Such methods would be an excellent preparation for matriculation examinations; believe one who has seen them tried.

Thirdly, and this is again on Montessori lines, we must consider the individual more, and arrange the work to suit her capacities and needs. It is fatal to try to make every girl learn everything. We must have electives; we must not fall into the fallacy of the *allgemeine Bildung*, or follow the deadly fashion of the Scottish intermediate and leaving certificate examinations. There is a very real danger here in the new era. Persons in high places with great influence are enamoured of the Prussian and Scottish systems, which might cure some of the weaknesses of a boys' school. Other influential persons are fighting the battle of science and of the humanities, and are demanding that their own subjects shall be made a necessary part of all secondary education. But who is standing up for the girl, who will see that she is not overweighted? These Government committees contain scarcely any women experi-

enced in the education of girls; the science committee has no woman biologist to stand up for that type of science which the girls' schools have found to answer their needs. The manifesto of the five humanist associations takes little account of the burden their scheme would place on the average girl. We, whose main duty and interest is the child, not the subject, must make our voices heard in protest against this coming over-pressure, if the womanhood of the nation is not to be injured in its growing time. Each school must find its own solution of the problem. One problem of curriculum will, in the new era, be easier of solution—the place of the domestic arts. If, as seems likely, time will have to be found in the education of boys for a certain amount of military training, the corresponding time in girls' schools will be free for housewifery teaching. Further, there will be in the homes, there has been already, a revival of the practice of housework by educated women. Some of the time given to games and amusement by our girls will be spent, as it was in my youth, in helping the mother at home. It was for this that the free Saturday morning was arranged by Miss Buss in the early days. Saturday-morning hockey ought to be abolished in favour of marketing and kitchen work. The schools can give a certain amount of teaching in cookery and sewing and even laundry-work; but the home is the proper place for the girl to learn housecraft, and her mother is the proper teacher.

Among the housecraft subjects the school can teach is of course hygiene; this is best done, either by or in close co-operation with the woman medical officer. In the new era we shall see, it is to be hoped, much greater co-operation between the teacher and the woman doctor. Medical inspection of the right kind, with the proper *personal* touch, helps us more than I can well say with some of our greatest difficulties. I cannot speak too strongly on this point, and I would refer those who wish for details as to the kind of help that is given to Dr. Catherine Chisholm's book on the subject. As has been suggested above, the future will bring greater pressure in the girls' schools; we feel this already. Our only hope is in the influence of our medical women, who will be listened to by all concerned, and who really know and can judge confidently in matters where we teachers are but amateurs.

The fifth point is vocational education. As many more girls will have to earn a living, and as money to spend on their education will be less, schools in the future will do more and more to develop courses of study which,

while presenting the elements of a liberal education and retaining the girls through the valuable later years of school life, will prepare directly for employment on leaving school. I have long believed firmly in such courses, not only because they are of practical use—use which has of late been proved over and over again—but even more because, through such training, many girls make progress who never did well on ordinary matriculation lines. I am convinced that there are many girls—possibly many boys also—for whom the best secondary education is that definitely directed to and coloured by their future vocation, as is that of the Royal Naval College at Osborne. On entering such courses they work as they had never worked before, and the work is their own; they mature in character, they learn the spirit of service and citizenship. It is not so much that in a vocational course a girl comes to write one hundred words a minute in shorthand, or makes so much money by the sale of vegetables from the school garden, or so many plum puddings for local hospitals in the cookery lessons; it is that she gets out of her vocational course the true spirit and discipline which she cannot gain from the usual academic courses of study. For this reason time is of the essence of the contract; two years (in my own experience) is desirable, and nearly half the time should be given to non-technical studies, coloured and biased by reference to the technical ones. In the rural economy course, for example, biology and some mathematics would be emphasised, and a foreign language might be omitted, while in the secretarial course the reverse would be the rule. Some of these vocational courses would be carried on in separate trade schools; indeed, in the new era we must have a much greater variety of schools, especially along the borderland where primary, technical, and secondary education meet, the provision for young people who go to work between fifteen and seventeen.

It has seemed better to consider the more purely educational questions first, and then to glance at certain *administrative* problems which will gravely concern our schools. The first and most serious of these is the danger of bureaucratic control. This has since the Act of 1902 become a very real danger to secondary and even to higher education in England, as it has long been in America. There the influence of the official and the local authority has brought it to pass that much of the best teaching is outside the public system, and has killed the initiative of the headmasters in the public schools. Those who know are well aware how quietly all over England the position of the teacher is being

injured. Can one recommend an able assistant-mistress to seek a headship under a local authority which, on grounds of a very false economy, prevents her having a secretary, even if she pays for one herself? There are many less well-known examples of unhappy conditions, conditions which by injuring the teachers injure the children. What is the way out?

We cannot, as members of a national service, expect to be autocrats; there must be public control. But it must be through the une-honoured and well-tried system of governing bodies. Every school ought to have its own board of governors or managers, which should contain representatives of the parents. These governors will take a real interest in the school, will bring breadth of view to supplement the narrow knowledge of the professional teacher, and will make the school answer to the needs of its area. Not by sets of rules from an office, but by the English instinct for compromise and the public spirit and common sense of unpaid public servants will public control of the school be best secured.

For a central authority we must have, as well as the Board of Education, an organ of self-government as a profession, like the General Medical Council. The Teachers' Registration Council will, we hope, serve this purpose. We teachers can do much ourselves by breaking down the barriers between different branches of the profession, by good comradeship and professional spirit. Mistresses with Board of Education certificates from good two-year course training colleges should be welcomed in our secondary schools as teachers of forms up to thirteen years of age; our own Junior School mistresses should try for posts in elementary schools; mistresses with high academic and specialist qualifications may teach both in the high school and in the university; university research scholars may teach part time in the secondary schools. It is perhaps a counsel of perfection that heads and inspectors should periodically go back and serve as assistants again, but it would be very good for them and for their subordinates.

We need, as a profession, more contact with the outside world than we get even in our holidays. We need to be workers in it. This leads me to suggest to you that we ought to have something analogous to the retirement rules in the Navy and the Army, by which, e.g., a major must retire at forty-five if he has not become a lieutenant-colonel. If an assistant-mistress by the time she is about thirty-five is not likely to get a headship or a post of some importance and dignity as an assistant,

she should give up teaching and take to those other professions now opening for which teaching experience has been already found to be so good a training, occupations such as welfare work in factories and other forms of social work, the better type of business posts, posts as labour exchange officials. In all these, women teachers I know are doing well. It might be desirable to take up such work for a time only, and then come back to the schools —anything to get out of the grooves in which so many of us get fossilised, men and women alike.

Thirdly, it would be a calamity if in the greater interest now taken by the State in education the place and influence of the parent were destroyed. It is sad enough that hitherto in elementary education almost of necessity the parent has been ignored and powerless. This deficiency is a main reason for the weakness of our elementary system. The virtue of the day school lies in the co-operation of the school and the home, especially with girls. "Co-ordinate jurisdiction with mutual subordination" is the formula which best defines their relation, the well-known Scots formula for the relation of Church and State.

It has been no small part of the good fortune of the girls' high schools that they have had, because of their fees, to depend in part on the parents, and therefore carry the parents with them and satisfy the needs of their clientele. The most serious objection to free secondary education appears to me to be that the influence of the parent will thus be dangerously lessened. We teachers do not know everything about the children, after all. One reason why the official is so dangerous is that he knows nothing—they are only numbers to him. To the parent the child is everything. The modern fashion of belittling the parent and the family defies alike biology and the Fifth Commandment, and no lasting good can come of it. The greatest administrative reform we need in education is to restore to parents their proper place.

In conclusion, speaking as I do to women of my own profession, to whom I owe truth and sincerity in the matter of our future duty as teachers, I would make bold to say that the greatest need for all our work in the new era is that it should be vitalised and illumined by an inner spiritual purpose. This faith, this philosophy must permeate all our teaching: the separate formal periods for religious and moral instruction, observance, and training have their place, of course, but they are of little use if the life of the spirit is limited to these. It must go right through everything, from the smallest detail of physi-

cal care and supervision to the most advanced lessons in science or history or literature.

In Mr. A. Clutton-Brock's book, "The Ultimate Belief," as in his recent articles, we have indications how this penetration can be carried on, and how essential it is. You will remember he shows there that man can find his ultimate satisfaction only in the pursuit and achievement of a spiritual purpose, which he considers as Truth, Goodness, and Beauty. The Rev. William Temple, in his British Association address last September, brought out the same idea, which he expresses briefly in a recent letter :

We need for our lives some ultimate, and not merely comparative, allegiance. We need some ruling principle which shall give their sphere and place to all the admirable aims and causes which just now claim our attention.

The phraseology is different, but the meaning is the same. In these deep things all expression is inadequate and incomplete. So will it be in the schools : some will be provided by particular social groups as special organs for the expression of certain elements of truth more forcibly ; in others a more general and less exclusive philosophy will prevail, and the many-sidedness of truth will be more freely recognised. But whichever way be the custom, the ultimate responsibility comes on the teacher. " It is not what we say, or even what we do, that matters, but what we are." We have to go on with our regular work according to the training and the rules of our profession, without thinking too much of our responsibility ; but we need the inner strength and wisdom that come from the deepening of our own inner life, according to the method which each has found to be the right way for herself. We must each within our souls keep alight the sacred fire, and so all around us will receive from it light and heat. We must, by some spiritual dynamo, draw from the central source of power the current we need to drive our shaping tools. All these are but words : the metaphor, ancient or modern, is but a phrase. Let us turn rather to the similitude given long ago by the greatest of all teachers : " Come ye after me, and I will make you to become fishers of men."

*The Earliest Voyages Round the World, 1519-1617.*  
Edited by P. F. Alexander. xxiii+216 pp. (Cambridge University Press.) 3s.—This book is a useful supplementary reader or source-book for classes in history or geography, or both. It conveys in practically contemporary form accounts of four voyages round the world : the Spanish expedition of Magellan, the two English journeys of Drake and Cavendish, and that part of the Dutch exploration under Le Maire and Schouter which led to the discovery of the route round Cape Horn.

## THE OBJECTS OF SCIENCE TEACHING IN SCHOOLS.<sup>1</sup>

By the Rev. J. R. WYNNE EDWARDS, M.A.  
Headmaster of Leeds Grammar School.

IT must be remembered that in science teaching in schools two chief objects are in view : first, the acquisition of facts that "every educated man ought to know"—the laws of Nature, the constitution of our planet and its atmosphere, the chief properties of light, heat, and electricity, and their bearing upon daily life; and, secondly, the respect of the man of science for truth—his determination to observe phenomena, irrespective of preconceived ideas, and to reason on observed facts without being hampered by preconceived theories. (The difficulty of carrying out such a determination even by students of science is well illustrated by the fact that the discovery of large quantities of inert argon in the atmosphere was not made for a generation after the constitution of the atmosphere was supposed to be known with absolute accuracy.)

Now of these two objects the second is by far the more important, and if we are to keep our place as a nation in the foremost ranks in the world of thought and of the industrial world also, it is essential that such an attitude of mind should be recognised as a necessary part of the equipment of all educated men. As Lord Bryce pointed out in his wonderful address to the Classical Association at Leeds, there is no necessary antagonism between humanistic and scientific studies. They are alike necessary and complementary in the training of the well-balanced mind. This is a point in which we have at last reached agreement, and it has been found by those who have tried it that there is no insuperable difficulty in giving boys who will later take up classical studies a suitable course of science up to the age of sixteen, or in giving would-be mathematics and science students a training in linguistic studies. They will not be able to compete with the cucumber-frame products of the preparatory schools in the present unhealthy competition for scholarships at the age of fourteen, which have been forced upon these schools by the stupid system by which the public schools make their awards ; but when they reach the university stage such boys will not find themselves behindhand in classics, and will have the inestimable advantage of being able to understand what scientific people are talking about and the main principles underlying scientific method. They may even be able, like the late Lord Salisbury or Mr.

<sup>1</sup> From the presidential address to the Incorporated Association of Headmasters at the annual meeting on January 9th, 1917.

Behaviour, to bring to the aid of science the dialectical skill and power of expression which their classical studies have given them.

And here I would enter the strongest protest against the modern fashion of regarding humanistic as compared with scientific studies. Both are equally necessary, and I am always thankful that a good all of my time at school was devoted to classics, and that I was not allowed to specialize until a few months before I stood for a science scholarship. I would even go further and say that I believe the very best foundation for the most advanced scientific work is to be found in some cases in a classical training in early stages. My greatest Oxford friend took Classical Greats before beginning his medical work, and when he reached the age of thirty-five had passed all the men of his University standing in the London Hospital.

We are all slowly being forced to the conclusion that we have been moving in too narrow ruts, and that we must get out of them if we are to hold our own in industry with Germany and America after the war. The establishment of committees by the late Government to inquire into the teaching of science and modern languages, following upon the interesting questions lately addressed by a body of eminent scientific men to certain headmasters and parents, is a sign that we are at last alive to the necessity of setting our house in order.

But when we are agreed that the time has come to improve our systems of science teaching and to bring science to bear more fully on the problems of our daily life, we are met by two difficulties, the solution of which will tax all the ingenuity of the nation. We are all agreed that science must be taught, but the question at once arises, "Who are to be the teachers?" It has been notorious among headmasters that no post is so difficult to fill as a science one. And if science is to become in all schools, as it already is in the majority of State-aided secondary schools, an integral part of the education of all boys, the question of finding adequate teachers becomes most pressing. We are the victims of a vicious circle.

According to the interim report of the Consultative Committee on Scholarships for Higher Education, there were 440 scholarships awarded at Oxford and Cambridge during the year 1911-12. Of these, 205 were awarded for classics, 78 for mathematics, 81 for science, 56 for history, and 8 for modern languages. As long as so small a fraction of the scholarships at Oxford and Cambridge are awarded for science, and as long as the bias in the public schools is too largely humanistic, so long shall we fail to attract a sufficient pro-

portion of the best brains of the country to the teaching of science; and as long as science masters as a whole are inadequate (there are of course plenty of brilliant exceptions) we shall expect to find that the weight of influence is against the pursuit of science, and a false idea tends to arise that the reason of the inadequacy of science masters is that science does not afford a training for the mind at all comparable with that given by the humanities. If by science we mean science pure and simple, I am inclined to agree; but if it were the custom for science students to find time for a sound training not only in their mother-tongue, but in some extraneous subject such as history, or a modern, or even an ancient, language, I feel sure that such a training would prove the basis of a sound education.

It is noteworthy that many of the masters of science, such as Huxley and Tyndall, have been masters of expression also. It is absolutely essential that a solution of this difficulty of increasing the supply of science teachers should be found, and all schoolmasters should use their influence to persuade an adequate number of their old boys to take up science teaching as a profession. This is not an easy task. We, who are teachers by choice as well as by necessity, know that no calling is more fruitful in hope and in realisation, but to the mind of the undergraduate the profession will often have little attraction, and he needs showing that it is really an adventure of faith. I may say in passing that the burning question of the salaries of teachers is most insistent here. If we are to attract good science men into the profession, they must be paid adequately, and the highest positions in the profession must be open to them. We have already overcome many prejudices, but another that must go is that no one but a classic can preside over the destinies of our great public schools. I believe that in the single exception where governors have had the wisdom to choose an eminent man of science it has not been found that the classical side has suffered in any way.

But the second difficulty is still greater. It is to adapt our science teaching to the need of industry without taking away its power as an intellectual stimulus, and to persuade the manufacturers of our country that it is to their interest to have the very best advice that science can give them and to pay for it accordingly. The difficulty arises from a very real misunderstanding between academic and practical men. "There is a real danger of teachers underestimating the deep-seated powers of Englishmen; of neglecting the true genius of our countrymen; and, in short, of falling into a narrow-mindedness which tends

to put us out of sympathy with the people we desire to serve. No one who has studied the history of our industrial development, or who has moved observantly among our industrial community, can have failed to be impressed with the great native capacity of Englishmen for practical affairs. The quality is one exceedingly difficult to define. It is very elusive, but it is there—the power of doing things—a power compounded of energy, shrewdness, determination, sense of the fitness of things, and knowledge of the intuitive kind. Who does not know the man who, somehow or other, can get hold of the right thing; knows a good thing when he sees it; has an unerring sense of a wrong thing; knows when and where to buy a thing, when and where to sell a thing—who, in short, does not know a good craftsman; and where in the world will you find a better than in England? I honestly believe—nowhere." On the other hand, this same practical man has an innate distrust of our scientific theories. He thinks that the university man of science is working somewhere in the clouds and without any reference to the wants of daily life; and it is our part to show that this is not the case, that it is the master of pure science who finds out the ideas which lie at the back of most modern improvements—wireless telegraphy, Röntgen-ray treatment, Welsbach mantles, and the rest. "By what definite plan are you to get discoveries of this kind made? The answer we know is that you must let your men of genius work in their own way. The time has gone by to wonder whether the scientific work carried on in the spirit of a philosopher or a man of genius with his feet on the earth subserves the material needs of humanity. Who is there who will dare to set his finger on any patch of new natural knowledge, and say, 'This may be edifying, but it is nothing to us'?"<sup>1</sup>

To come, then, to the present facts. I have made careful inquiries as to the extent to which this demand is being met at the present time, and I think it will be worth while to give the results in some detail, and in giving these somewhat sordid details I must guard against the imputation of considering that the practical business outcome of our scientific teaching is more in the thoughts of us schoolmasters than its influence on the minds and characters of our pupils. The real difficulty has been in the initial stages. A number of firms are prepared to give a fair salary to a scientific adviser who has mastered all the details of their particular needs, but they have not all the foresight to secure good men and train them. I remember some years ago having a temporary

mathematical master who was seventh wrangler and had got a first in the Natural Science Tripos. He was not at all suited by temperament for a schoolmaster, and I asked him why he did not try to get into some works as chemical adviser. He told me that he had answered two likely applications, and that in both cases they promised that if he would come for two years without salary they would be prepared to offer him a salary of £200 a year at the end of that time. To us who know how impossible it is for the average man who has spent four years at the university with the aid of scholarships to keep himself for another two years from the age of twenty-three, the offers were indeed empty. Before the war the salaries of works' chemists were generally inadequate. An analytical firm would start a graduate at £100 or £120, with the possibility of rising to £150.

A member of our own association wrote that after graduating B.Sc. (second-class honour in chemistry) and spending a year in research work in Germany and a further time at a local university, he was offered a post of £100 as "research chemist" to a large firm. The works manager of the firm was killed a few days afterwards, and he was offered the post at the princely salary of £150, with no hope of a rise. He declined the offer, and accepted a science mastership instead.

Another member of the association writes: "If you want examples of successes, I have no much to give you; but if you want a typical English method of treating science, here is one from the experience of one of my best pupils—a scholar of Trinity, who obtained first classes in both parts of the Science Tripos in his three years at Cambridge. He was recommended to a great armament firm, and after an interview with the directors (he is a most presentable person, by the way), and full consideration of his claims, the firm offered him a post at exactly nothing a year for two years with the prospect of being taken on at the end of that time at a salary. If they had offered 25s. or 30s. a week he would have gone and risked it, but he could not afford to work for one of the wealthiest firms in the country for nothing."

Prof. Cohen, in a recent address to the Cavendish Society in Leeds, gave some amusing instances of this attitude of the employer. A university student asked a possible employer if his B.Sc. was essential, and was told that it would not invalidate his application. Another graduate who wished to discuss with his employer a scientific problem relating to manufacture was told by him that he "didn't want any of his academic twaddle."

But this account would not be comple-

<sup>1</sup> Prof. Smithells' address to the Association of Gas Workers, 1909.

unless one were to add that there are some firms in England that have been fully alive to the value of the best scientific advice. They have paid their men adequately from the start and encouraged them to undertake research and make suggestions of new methods, and if I were to mention their names you would realise that the result was satisfactory from a financial as well as from a scientific point of view.

This was before the war, and no doubt things are better now, but one still hears of graduates serving in Government munition works as science experts at £2 a week, which they are prepared to accept in their anxiety to "do their bit" for their country, while workmen in the same works may be earning their £5 or £6 per week. There are, however, signs of a change, and the great demand and very limited supply of expert science men is giving rise to abnormal conditions. I have heard of a junior member of a university staff being offered £300 a year by a firm; and a member of the association tells me that his chemistry master was allowed to name his own salary as assistant secretary to a great firm, and was raised £50 within six months of his appointment.

We are meeting at a time full of possibilities in education and full of hope. New schemes of national education have been put forward by the Council of Educational Reform, by the Workers' Educational Association, and by the National Union of Teachers. All agree that the national education must go farther than it has done in the past; that education for all must reach to the fifteenth or sixteenth year; that after that boys who leave school must have their hours in the factory limited and must have time to continue their education; and that the secondary schools must be open for all who can profit by them. Even the older universities are moving, and Oxford, apparently despairing of being able to reform Responsions, is seeking for some plan of insisting upon some organised training in science for all those who intend to seek her degrees. We are not so much concerned to know whether the particular plan she has put forward is workable as to hail with joy her realisation that an understanding of scientific method is the prescriptive right of every educated man.

This will be a momentous year in the history of English education. The supreme crisis gives us an unrivalled opportunity of advance, and we are happy in having at last at the Board of Education, in Dr. H. A. L. Fisher, a distinguished Oxford historian with a wide and deep knowledge of the problems of education in all their aspects, and we are hopeful that under his guiding hand a reasoned scheme of national education may come into being. We

do not look forward to a sudden educational millennium, and we know that many grave problems of our national existence may stand in the way of an early realisation of our hopes, but we do feel that a beginning will be made which will ultimately produce saner minds in a saner body corporate.

We have spent on this war sums that would have seemed altogether impossible to the sober judgment of three years ago, and we have heaped up for ourselves a national burden which can never be shaken off in our lifetime; but the possibility of such expenditure has opened our eyes to the magnitude of our national resources, while the extraordinary ingenuity with which our enemies have brought to their assistance the results of many years of patient scientific research—in their industries before the war and in their methods of attacking during the war—has brought home to us the supreme necessity of making the fullest use of the practical results of scientific research if we are to preserve our position as one of the leading nations of the earth. We must resolve, therefore, that, whatever economies may be necessary in order to recover from the effects of the war, we will not deprive the generations who are to come after us, and must supply the places of all those brave ones whom we have lost, of their right to the best education that it is in our power to give them.

### THE EDUCATION OF GIRLS AND THE POSITION OF WOMEN TEACHERS IN SCOTLAND.<sup>1</sup>

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THE War Office issued recently an illustrated list of the occupations in which women are at present replacing men absent on military service. In this list are represented various types of munition work, different processes carried on in breweries, dye works, tanneries, and printing-houses. Illustrations appear of women engaged in agricultural work and the care of horses, of women acting as porters and van-drivers, of women taking the place of bakers and butchers, and serving as assistants in large provision shops and stores. They are seen controlling or repairing complex machinery requiring for manipulation both strength and skill.

In addition to the women workers named must be mentioned those who, since the war broke out, have undertaken new forms of clerical work in banks, offices, and Government departments; those who are taking the place of men as teachers in boys' schools; and

<sup>1</sup> From a paper read at a conference arranged by the Scottish Education Reform Committee, and held in Glasgow on January 3rd-4th, 1917.

the vast army of those engaged in alleviating the suffering of the sick and wounded, whether as doctors in charge of military hospitals, or as nurses or ambulance attendants.

Such are the pursuits in which the women of our country are at present engaged. We are witnessing the first stage in a tremendous experiment, which cannot fail to supply thinkers with very important data bearing on woman's function in the State, and the type of education which would best prepare her for it.

What women are doing now may usefully be made the starting-point of an inquiry as to what they should be doing under normal conditions, or at least under the conditions likely to prevail after the war. It may be prudent, however, in any investigation made at the present time, to discount certain observed results as supernormal in character and not likely to recur. During the past two years supreme efforts have been made by women in response to motives of exceptional intensity.

We may be witnessing a phenomenon comparable to the "Devil's leaps" in different districts, which test the credulity of tourists and probably bear witness in legendary form to some superhuman achievement in times of crisis. If we cannot discuss the output of the woman munition worker without allowing for the motives by which she is influenced, it is clear that we must place before ourselves certain definite aims in girls' education before criticising existing systems or suggesting modifications. An ideal must be framed, a conception which will satisfy the highest aspirations of women.

Now the first point I wish to make is this, that in the last resort no statement of aim which does not transcend mere sex difference will be found satisfactory. Philosophy and religion are indeed agreed in regarding sex as a negligible factor, reversible even in the view of such as dream of re-incarnation and a cycle of lives. It is perhaps necessary to insist on the spiritual significance of woman's life as its essence, because she stands for the perpetuation of physical life and has been associated in every age (not always creditably) with special endowment of physical charm. "Puffs, powder, patches," satisfactorily sums up women in Pope's view, and certain writers on eugenics in modern times are preoccupied rather with physical fitness than intelligence.

If we accept as a worthy aim of education the conception of "self-realisation for the service of the race," the difficulty arises, in applying it to women, of deciding what should be the sphere of self-realisation and service. The seclusion and subjection of women have

found advocates in every age. History is sometimes appealed to as justifying such a policy. But history shows many fluctuations of practice and sentiment, and affords no evidence that women are unfitted to undertake responsibility and to participate in the life of citizens.

The teaching of biology has a more direct bearing on the question of woman's sphere. Prof. J. Arthur Thomson reminds us that man and woman, in their resemblances and their differences, illustrate the great sex divergence which is found at every stage in animal evolution. These sex differences are not mere additions or appendages to organisms similar in other respects. The differences in male and female organisms are fundamental, pervasive, and express themselves not only in structure, but in habits and functions of life. Even minor differences are of importance because they are closely related to this fundamental diversity. The superiority of men over women in muscular strength might perhaps be cited as an expression of a fundamental difference in bodily structure. The muscular inferiority of women, being an essential and not an accident, ought probably to be taken into account in any attempt to decide between suitable and unsuitable occupations.

Related to differences of structure and of vital processes in men and women are certain characteristic qualities or tendencies. It is important to avoid dogmatic statement where conditions are complex and evidence conflicting. We appear, however, to be justified in the assertion that men in general display more energy and incline to experiment, while women lean to stability and the acceptance of things as they are. Men, as a rule, have greater powers of conscious reasoning, women of intuition. Men discover or utilise new forces. Women combine and harmonise them. Men are inclined to generalise, women to dwell upon details. Genius is more common among men than women; the capacity for taking pains is stronger among women than men. (Carlyle's assertion that the two things are identical is entirely untrue.)

These statements will scarcely be regarded as controversial; their truth is generally admitted. We must, however, bear in mind that it is often difficult to decide whether differences are innate or due to environment. Nature and nurture are joint producers of the organisms we study. The vagaries of inheritance, which follows now the male and now the female line, are also to be reckoned with. We must beware of labelling as natural incapacity what may be imperfect development due to lack of proper stimulus and exercise.

What conclusions, then, do we draw from

the study of biological facts? We conclude, in the first place, that the highest achievements of woman, her most original contribution to the sum of human effort, will be the natural outcome of her distinctive qualities of mind and body. Her specialised activities will also be the most productive ones, and if increased output were alone desirable, if the principle of division of labour could be applied without limit in the social sphere, we should have a strong argument for restricting women's pursuits. Human beings are, however, different from machines. Those who reach the highest level of development are those who show the greatest capacity for dealing with varied experiences. To stagnate is to die, and to continue to do things which have become mechanical from repetition is to risk mental atrophy.

It is obvious that home activities, the care of children, the tending of the sick, call forth many of the most characteristic aptitudes of women. It is absurd to conclude that her service will be less valuable if it is tinted with intellectual gifts or reflects a cultured environment. The charge has been brought against the higher education of women that it creates a group of interests which are antagonistic to the claims of the home and parenthood. If this is so (the facts are, of course, in dispute), it may be due to the failure to bring intellectual pursuits into vital relation with everyday life. The particular line of study adopted may in individual cases be unfortunate. Intense preoccupation with highly abstract studies may tend to weaken in men and women certain forms of feeling and perception. Unless an antidote is resorted to, the parental value (actual or possible) of men and women alike may in such cases be depreciated. It is, however, unfair tacitly to imply that diminished intensity of feeling is reprehensible in the woman and venial in the man.

Let us now endeavour to apply these general principles. The form of education given to women at the present time is the outcome of co-education where it has long been in force, and of the conditions under which girls' schools of the modern type became general. The pioneers of the movement for such schools held the conviction that women suffered from the lack of opportunities such as were open to men. The opponents of change denied the capacity of women to undergo and profit by the proposed discipline. The implied challenge had to be met. A policy of expediency had to be adopted. The first step appeared to be to show that girls and women could pass the examinations which were the recognised

tests of the education of boys and men. Girls were accordingly presented for local examinations, leaving-certificate examinations, and university examinations under the same conditions as their brothers, and soon accumulated a long list of successes.

If we compare the average middle-class women of our own day with those of the early Victorian period, from which the present system is a recoil, we find in them more mental alertness, greater self-control, and a wider experience of life. The completeness of their equipment in other respects depends, in my view, on the success with which bookish interests have been supplemented by an enlarged social outlook and a strong corporate spirit. The indirect forces of education even at the school stage are of great importance where women are concerned. Specialisation in its extremest form rarely falls to their lot in life, and usually entails loss upon themselves and others.

In reviewing educational practice in relation to reform, we must keep steadily before us the needs of the average individual. The highly gifted girl will not be seriously injured by a bad system, unless it allows her to become the victim of excessive application. She can, as a rule, reach her inevitable goal by a variety of routes. The girl of limited capacity can, however, only be stimulated successfully within a restricted area. There are, so to speak, patches of mental anaesthesia or low sensibility. She may become a failure in life because during the formative period she was only stimulated in areas where she had no powers of response. The mistake in the past has been that the natural interest which girls take in all problems connected with home life has not been made the starting-point of a reasoned system of intellectual training.

Alternative curricula are urgently needed from the age of thirteen or fourteen onwards to meet the needs of girls of different types, and to allow of development along lines of study not suitable for boys. There should, however, be no compulsory differentiation. The option of taking a course identical with that prescribed for boys should be left. Some knowledge of hygiene and the laws of life should be imparted to all girls. During the last two or three years of school life many would profit most by courses which would develop intelligence and powers of reasoning through the study of problems connected with home life. The home, as we know it, could be shown in relation to economic development and the facts of history. Interest could easily be aroused in social work for the alleviation of poverty and sickness.

Something should be taught of local government and of legislation affecting the interests of young persons and of women (and other) wage-earners. Knowledge such as this would tend to strengthen the protective instinct and quicken sympathetic response. Such feelings are closely connected with maternal instincts, and they should be developed in all and find an outlet, whether in the close ties which marriage brings, or in the work and interests of the economically independent woman.

The domestic arts, cookery, laundry-work, needlework, should be learnt at school by more girls than at present; they cannot, of course, be learnt by all. The lessons given should, however, start from a scientific basis and include laboratory work in its simpler applications to home activities. Intellectual effort as well as skill of hand should be exacted, and certain purely cultural subjects insisted on. The study of design could be applied in needle-work, and simple methods of keeping accounts could be taught as part of an arithmetical course.

Girls who leave school at fifteen or sixteen should be able, if they desire it, to gain an intermediate certificate by devoting some time to domestic arts during two years of their course. This work should be accepted in place, say, of algebra and geometry, and some of the science courses now in operation should be modified in the direction of illustrating home arts. But to yield satisfactory results work of this type should be done for the most part at the post-intermediate stage and lead up to a leaving certificate. When girls stay at school until eighteen or nineteen, little, if any, of their specialised study of domestic science should come into the intermediate course. Subjects of general culture are the best preparation for specialisation of any kind.

I have little hope of an education of the type I have named being rightly conceived and satisfactorily carried out in the schools while the teachers of domestic subjects enter upon their special training with so low a standard of general education. The intermediate certificate admits to training, and, indeed, even that low standard of attainment is not exacted in all cases. What it is desirable to bring about is nothing short of a revolution in the attitude of women generally to home life in its relation to society, and in the methods of domestic management. How can this be done unless the teachers are widely read in history and economics, and have undergone an adequate training in science? A system of co-education such as exists in Scotland is not favourable to the development of a scheme such as I have outlined, nor is it likely to be promoted

where women teachers have no scope for initiative.

Co-education will no doubt continue to predominate in the educational system of Scotland, and appears on the whole to be in accordance with Scottish sentiment. From the period of adolescence, however, if not earlier, some drawbacks must be noted so far as girls are concerned. Under a co-educational system too little stress has been laid on ideals of conduct directly connected with woman's function in life; there has been a danger of overworking girls; there has been too little incentive to self-realising activities unconnected with the study of books. There has been a tendency to rest content with an inadequate standard of personal refinement and manners, and there has been for girls too little association with intellectually gifted women in positions of responsibility.

It is therefore desirable, in the interests of girls attending all grades of schools (primary, intermediate, secondary, junior student centres), that provision should be made for special supervision and control by a woman teacher with definite status and special responsibility. Where the head of the school is a man, such a woman teacher would as senior mistress or lady superintendent take special oversight of such matters as the girls' health, conduct, recreation, manners, and relations with the boys. Women appointed to such posts should have a good scholarship record as well as sympathy, sound judgment, and experience. In large centres there should be some schools of the intermediate and secondary type under the education authority, *not* of the co-educational type, with a woman as head and a majority of women on the staff. The position of women teachers in Scotland also calls for careful consideration. They have at present little scope for initiative, and their remuneration is quite inadequate. They compare unfavourably in these respects with mistresses in England, where the secondary education of girls is practically in the hands of women.

The Association of Headmistresses in England is an influential body, invariably consulted by the Board of Education when any matter affecting girls is under consideration. In 1911 there were in grant-aided secondary schools alone 142 headmistresses with salaries from £300 to £1,000 (in one case over £1,000).

A comparison is instructive of official figures supplied by the Board of Education and the Scotch Education Department with regard to schools as at March 31st, 1911, and June 30th, 1914, respectively:—

	Secondary schools in England (grant-aided). <sup>1</sup>	Secondary and higher grade schools in Scotland (grant-aid d.).
Average salary for headmistresses	332	175
" " " assistants	123	110

The figures for primary schools in Scotland are even more striking :—

Of the 10,141 assistant-mistresses, 77·7 per cent.

had less than £100.

Of the 919 headmistresses, 54·3 per cent. had less

than £100.

If we consider assistants and heads together we find that 75 per cent. of the women at work in primary schools had less than £100 a year.

It would be easy to show that the subordinate position of women teachers in Scotland was due in the first instance to their unfitness for higher work. The old system was, however, retained from a spirit of conservatism after changed conditions had deprived it of justification. A university education and proved skill in teaching have (except in a very few instances) left women ineligible for any but subordinate posts. As modern language specialists, they have in some schools been responsible for the highest instruction given. In other departments they have had neither responsibility for a department nor the influence which is its correlative. The position of subordination as regards organisation and teaching which has been assigned to women has affected unfavourably their development and their outlook. They have for the most part acquiesced in the existing system; such women teachers as have aspired to wider opportunities and more scope for initiative have had to seek these things outside of Scotland.

The question of the position of women in the Scottish educational system will have special urgency and importance in the new conditions after the war. When schools are reduced in size and increased in number—a much-needed reform—it is probable that more women than at present will be eligible for headships. The conditions of their employment and their relations with men colleagues will call for careful consideration and adjustment.

But apart from the question of any modification of system and of the serious loss involved in the passing of many able Scots-women into English schools, it is inconceivable that the present rate of payment in schools of every type can remain in force. Many women can scarcely subsist on the salaries they receive. Their preoccupation with material cares and their wholly inadequate resources debar them from travel, the purchase of books, the social intercourse and the

recreation necessary to maintain or increase their efficiency. Until the rate of payment is raised to a level which will secure for all women teachers a standard of living suited to the needs of the educated classes, it is idle to look for the improvement in general education which is a vital factor in the national development.

## RESEARCH IN EDUCATION.<sup>1</sup>

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EVERY student of the history of education knows that great social upheavals bring in their train more or less profound changes in education. In the light of this principle it is not difficult to make a general prophecy regarding the effects of the world-war on our schools and universities. Indeed, the beginnings of change are already in sight in the widespread educational renaissance, and in the various controversies which are its inevitable result. What is more difficult to foretell is the direction in which education will move in the near future. And even here we are not altogether without guidance. The outstanding lesson of the war has been the tremendous power of organisation and science in human affairs; and that lesson, which has been learned with blood and tears, is not likely to be forgotten with the return of peace. We simply cannot go back to the old-fashioned haphazard practices which have hitherto prevailed so largely in education as in every other sphere of national life. Whatever the particular reforms which may be instituted, the basis of them must, so far as possible, be the sure and exact knowledge we call science.

This idea is not, of course, a new one. Germany had applied it with conspicuous success in other fields than war; and so in a less degree had every civilised nation. Every wise manufacturer in our own country knew that if he were to keep up with the times he must continually be scrutinising old processes, and finding out new ones with the aid of the scientific expert. What had not been so clearly realised was that the same thing held good in all the practical activities of life—in education, for instance, as much as in industry.

It is true that there is a difference between education and industry. The fundamental questions in education are questions of value, which are outside science altogether; and personality, which is the essential fact in teaching, eludes scientific analysis. Yet, just because the spiritual values are meaningless

<sup>1</sup> A paper read at a conference arranged by the Scottish Education Reform Committee, and held in Glasgow on January 3rd-4th, 1917.

without organised expression, and because personality must embody itself in definite forms of behaviour, all the considerations which have led to a general recognition of the importance of scientific research in industry apply, to some extent at least, to education. The methods of organisation and of teaching current in our schools are in no sense inevitable. They have been evolved from the experience of centuries, and, like all human institutions which are the product of uncritical experience rather than of deliberate thought, they are of uncertain practical value. Many of them are excellent, but many, perhaps most, are not. Some are positively bad, and many more, while good enough up to a certain point, are wasteful of time and energy, and not very satisfactory in their results. Plainly, what is wanted in the efficient school system which is the ideal of all our reforms is the same constant examination and criticism of existing practice by scientific methods which are gradually leading to the elimination of inferior methods in other arts.

Following the industrial analogy, two forms of research may be distinguished. The one is what may be called theoretical research—research of a general kind, with no immediate reference to practical needs. This is the kind of work which industrial experience has shown to have the highest value in suggesting new ideas—it was responsible, for example, for the discovery of the aniline dyes and the incandescent gas mantle—and it is as necessary in education as in industry. At the very foundations of all educational effort are our presuppositions about the mental characteristics of children at different ages, about the mental differences of the sexes, about the hygienic effects of school life, about the remoter effects of studying particular school subjects, etc. In the absence of knowledge on such matters we are at the mercy of prejudice and of general impressions. Systematic inquiry properly directed has here a wide but little explored territory in which to work.

The other form of research may be described as practical research, directed to the solution of definite problems in educational practice. The number of such problems is legion. It is not too much to say that there is not a single subject in the school curriculum which could not be made to yield better results with very considerable economy of time and effort if only the same careful methods of investigation were followed as are employed by up-to-date business men with regard to industrial processes. Take, as an example, the teaching of writing. It might seem as if an operation so simple and so mechanical as writing offered little scope for research, but, as a matter of

fact, there is real uncertainty about the proper size of letters, the best slope, the most advantageous hand and arm movements, the value of guiding lines, the best method of teaching in the early stages, etc. Obviously a great deal will need to be done before we know how to teach writing in the most scientific way. And what is true of writing applies equally to other subjects.

Besides such questions of detail there are others no less practical, of a more general interest for school organisation. For example:—

(a) We need to find out the age at which the different subjects can be most profitably begun: whether, for instance, in view of children's imperfect comprehension of time relations, it is worth while attempting to teach history before ten or even twelve; whether, again, there is any advantage in teaching reading and writing before eight, or giving formal lessons in arithmetic before ten.

(b) We need to find out the number of hours per week that will give the best results in any particular subject: whether, for instance, as has been suggested, four hours arithmetic would not give quite as good a return as five hours.

(c) We need to get standards of performance established in the various subjects to provide objective tests of progress.

Assuming that the case for educational research has been made out, the question that immediately arises is as to the persons who are to do the research work. The answer is that it depends on whether it is theoretical or practical research which is to be done.

Theoretical research of a broad, comprehensive kind calls for expert knowledge and skill and for very considerable leisure, and could be best accomplished in connection with the universities and training colleges.

If, as seems probable, all the Scottish universities establish a Degree in Education at an early date, for the more advanced study of educational theory and practice, it is to be hoped that research work like this will form an essential part of the prescribed course of study. Even apart from the universities, instruction should be given in the technique of research in every training college by a special teacher engaged on research work himself. If there were a laboratory for experimental pedagogy in all the colleges as there is in Edinburgh, so much the better; but with or without a laboratory this kind of work should be part of the training of all teachers.

In the second kind of research the university and training-college teachers would be handicapped by their comparative remoteness from ordinary school work. The right people

there are obviously the inspectors and the teachers, who are up against the daily difficulties of class-room practice.

The inspectors are at the disadvantage of not being actually engaged in teaching, but the fact that in going round the schools they have the opportunity of seeing school work under all sorts of conditions puts them in a favourable position for forming a balanced judgment on the problems of the school. If the Education Department had a specialist on its staff devoting himself to educational research, the unsystematic observations of the ordinary inspectors might be directed and co-ordinated in such a way as to lead to really valuable additions to the sum total of assured knowledge about education. The admirable social reports on educational subjects issued by the English Board of Education when Dr. Michael Sadler was responsible for its investigation work show how much could be done in Scotland by similar methods. Another notable precedent is the employment of an expert psychologist for purposes of research (among other things) by the Education Committee of the London County Council.

But it would be a great mistake for the teaching profession to leave the investigation of educational problems either to university experts or to the Education Department. Scientific management after the American pattern, with all the workers' actions controlled by specialists, is a very dubious expedient even with manual labourers: it would be inevitable in the case of a learned profession. The only way of escape is for the teachers to become the experts themselves. In point of fact, there are many problems which could be far better dealt with by teachers than by any outsiders. It is true that there are comparatively few teachers with the special interest and capacity for making investigations, but that is all the more reason for giving the necessary facilities to these few, and for seeking to increase their number. With this in view, three things could be done:—

(a) The council of the new institute might have a research committee, composed partly of teachers (not necessarily members of the council itself) and partly of university and training-college lecturers acquainted with the methods and literature of research. This committee would decide which problems were to be taken up at any particular time, devise tests for their solution, arrange with the schools in which the tests were to be applied, and see to the working up of the materials obtained.

(b) Measures might be taken by this committee to encourage teachers to submit their problems or their investigations for considera-

tion, and to provide competent guidance to any who cared to undertake work on their own account.

(c) To secure the general co-operation of teachers, arrangements might be made for the publication of the work of this committee or of any independent investigators, as well as for a periodical survey of books and articles on educational research. A journal like the *Secondary School Journal* might profitably devote a couple of pages of each issue to this. It would be still better if Scottish teachers could publish a special journal, like the excellent *Journal of Experimental Pedagogy*, which is edited on behalf of the English Training College Association by Prof. J. A. Green.

#### PERSONAL PARAGRAPHS.

THE death is announced of Mr. J. G. Fitzmaurice, formerly one of H.M. Inspectors of Schools. Mr. Fitzmaurice was educated at University College, Oxford; he was afterwards called to the Bar, and was appointed an Inspector of Schools in 1871. On his retirement in 1902 he became Director of Education for the county of Warwick. Mr. Fitzmaurice was a good linguist, who studied the German system of education on the spot, and devoted all his energies to furthering the cause of education. He had a wide and varied experience, and at different times had charge of districts in the North, in the Midlands, and in London. His kind and sympathetic manner drew out the best work of those teachers with whom he came into contact. One of his colleagues writes: "I learned a great deal from him, for he took a broad view of schools, and was a shrewd judge of character. He had a wide experience of the world, and possessed a power of handling different types of men in which I sometimes fear we younger inspectors fall short."

\* \* \*

A NUMBER of inspectors have been lent by the Board of Education to other Government departments. Some of those in the Ministry of Munitions are proving that, though educationists, they are business men. One who acquired his business training as a headmaster is now distinguishing himself by cutting down contractors' prices. There are at the present time two widely different attitudes towards the work of inspection. One says, in effect, that inspection during the war can only be to see the things that are being done well, to admire them, and to talk of them to others; and what is the good of that? The other is that of the man who regrets his transference almost for the self-same reasons; he had lost the opportunity of en-

couraging the teachers who were doing good work, those who were carrying on.

\* \* \*

THE Council of the Girls' Public Day School Trust has appointed Miss A. F. E. Sanders, the present headmistress of Tunbridge Wells High School, to be headmistress of Sydenham High School. Miss Sanders was educated at Dublin and Girton, where she took the Classical Tripos. She succeeds Miss Sheldon, who was formerly a mistress at Blackheath High School, and from 1898 to 1901 headmistress of Dover High School.

\* \* \*

AMONG the schoolmasters killed at the front is 2nd Lieut. N. L. Naismith, of the North Staffordshire Regiment. He was formerly a master at Wadham House, Hale, and at The Craig, Windermere. One who knew him well in school writes: "If he had been spared he would certainly have made his mark in the scholastic world. Not for nothing did Noel Naismith live in this house, The Craig, without once losing his temper or saying an unkind word, doing more than he was paid for, and even doing it as though he were incurring and not conferring an obligation. I have never met a schoolmaster who had a better influence on boys or who was more beloved by them."

\* \* \*

THE REV. W. W. HOPWOOD, hon. canon of Lincoln, died on January 12th at the advanced age of eighty-three. Mr. Hopwood was formerly headmaster of King Edward VI.'s School, Louth, and of Queen Elizabeth's School, Alford.

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MR. R. WHITELAW, for forty-seven years a master at Rugby School, died on February 6th.

\* \* \*

IN the list of honours recently conferred is the name of Temporary Brigadier-General Fabian Ware, who received the C.M.G. He is the Director of Graves Registration, and it is mainly due to the efficiency of the work of his department that the identity of the graves of fallen heroes is maintained. Mr. Fabian Ware was formerly a master at Bradford Grammar School. He some years ago accomplished important educational work in South Africa, and on his return became editor of the *Morning Post*. His interest in education was maintained throughout his journalistic career, and under his guidance the *Morning Post* added to the good work that it was already doing for the cause of education.

IN his address to the Assistant-masters Association in January, the Dean of Manchester referred to himself more than once as a wreck among schoolmasters, though he is obviously at present far from a wreck. Bishop Welldon's comment on the accommodation at some of the old public schools as compared with that of the council schools drew from Mr. Somerville a reminder of the value of historic associations. He recalled a room in the building of which timber from the Spanish Armada had been used; a room of painful recollections to many, for it contained the whipping-block of the lower school; and none of those who knew it would for a moment consider the disuse of such a room, even in favour of a modern structure.

ONLOOKER.

#### THE NATURAL SCIENCES IN PUBLIC SCHOOLS.

WE are permitted to publish the subjoined memorandum drawn up by the committee of the Association of Public School Science Masters to serve as the text of the evidence offered on behalf of the association to the Government Committee on the Teaching of Science, the chairman of which is Sir J. J. Thomson. The memorandum presents reasonable views as to the purpose and practice of science teaching in the public schools, and gives the Government Committee valuable material for consideration, particularly in regard to the practical points upon which the association can speak with the authority of experience. The memorandum is supplementary to the statement, signed by Prof. Turner and Mr. A. Vassall, issued by the association in October last (see THE SCHOOL WORLD, November, 1916) in reply to an invitation from what is now the Council for Humanistic Studies to state the aims and educational claims of the teaching of the natural sciences.

##### Memorandum.

*A Statement of the Views of the Committee of the Association of Public School Science Masters on certain points of Fact, Principle, and Policy in connection with the Teaching of Natural Science in the Public Schools.*

##### AGE LIMITS FOR SCHOOL SCIENCE.

The teaching of natural science in public schools is of recent growth. Until quite recently most of the boys who took up this subject did so with the intention of making use of the training in their future careers. Even now, in some public schools, the number of boys learning science is small. It is, however, becoming recognised that science should form part of every boy's general education. For this reason it is necessary to put some, at least, of a boy's general training in science before the age at which specialisation should be allowed. Too early specialising is bad policy: the age at which this may be begun by the average boy is about sixteen and a half years.

Before this age (or its equivalent for forward

(ward boys) the pupil should have spent, on an average, four hours a week at science for a period of at least two years, and six hours a week for a further two years. Thus the work should be begun in the preparatory schools. The only work recommended to be done there is in nature-study and practical measurements (under mathematical masters). See "Nature-Study in Preparatory Schools" and "The Relation of Mathematical and Science Teaching" (Ed., each 6d.).

It is essential that all boys should have the chance of some systematic study of science. Courses of nature-study in preparatory schools cannot be said to supply this need, and boys enter the public schools in different forms according to their attainments at about the age of fourteen years. It is advisable, therefore, to begin the courses of systematic science in the best forms of schools, but rather in a form above which it is rare for a boy to enter. If science is taught in the lowest forms of a public school it should be of the nature of an extension of the observational work and mensuration done in the preparatory schools. When a boy has reached such a standard of general education that he may be allowed to specialise to a certain extent, he should have the opportunity of devoting about eight hours a week to science if he wishes to do so. At a still later stage the specialisation should be more marked in the case of those who wish a scientific career.

#### SCIENCE IN EXAMINATIONS.

If these ideals can be reached by any means other than making science compulsory in examinations, those means should be employed. If they cannot, compulsion by examination regulations must be accepted. But this should then be recognised as a necessary evil. Science masters know that there are boys whose intellects natural science makes little appeal through they believe that the proportion is smaller than in the case of Latin, to take an example. They call for the removal of compulsion in other subjects rather than for the employment of compulsion in their

case. They have no wish to hinder the progress of a special genius or of a heaven-sent artist by making him grind at an uncongenial subject for which he has no aptitude and which may not benefit him. A compromise would be to have compulsory examinations in science which carried good marks; but not to make failure in the subject responsible for failure in the examination. Science, though, should be compulsory for all boys for a substantial part of their time and school career.

It is possible that some system of inspection of schools by examining bodies, combined with the granting of certificates on the recommendation of a properly qualified master, might prove to be the solution of the difficult problem of insisting on science being learnt by every boy, without the restrictions necessarily involved when there are examination syllabuses. But the details of such a scheme would require careful working out.

So far as education in science is concerned, it is a good plan to place the subject in a group with

mathematics for examination purposes, and to insist on a certain standard of attainment in the group; for thereby it is the non-mathematical boy who is directed towards science, and he may be just the one to whom the subject is unprofitable.

The subject is of sufficient importance to stand in a group by itself. But by the system of grouping suggested by the Board of Education (Circular 849), the importance given to science seems to be less than half that attributed either to "Classics and Ancient History" or to "Modern Humanistic Studies." And in the grouping proposed in recent reports of the Previous Examination Syndicate, science in a general education seems to be valued much less than half as highly as Latin alone.

But there is, at present, a yet stronger argument against the attempt to foster the teaching of science by making the subject compulsory in examinations. So long as instruction in science was given only to those who were destined for a scientific career, it was natural (if, perhaps, unwise) to aim chiefly at inculcating scientific method, with a certain disregard of general knowledge of natural phenomena. This was done, for the most part, by logical courses in hydrostatics, heat, light, electricity, and chemistry. But in some of the schools where science has already become a compulsory subject it has been recognised that such courses may be unsuitable for the non-scientific mind. The attempt is made to arouse his appreciation of the value and scope of science rather than to teach him the elements of a subject which he will drop even before leaving school. In such schools a considerable proportion of his science hours is devoted to studying subjects ranging from the universe to the electron: astronomy, geology, biology, physiology, etc., are all drawn upon in such teaching; and science is taught in a general manner by directing the attention of pupils towards objects rather than by making them learn "subjects." In other schools the study of science is approached through its applications in engineering or agriculture.

Now that science is becoming recognised as an essential part of a liberal education, it is probable that the kind of teaching indicated above will be more generally adopted. The inevitable effect of making science compulsory in examinations would be to hinder experimenting in educational methods, at a time when this is most important.

In spite of what has been written above, if there is no way of making science training in schools both general and adequate except by compulsory examinations in science—a point on which this committee is far from satisfied—such compulsion must be employed. But the regulations should be framed in such a way as to limit the freedom of the teacher as little as possible.

#### EXAMINATION FOR ENTRANCE TO PUBLIC SCHOOLS.

The work recommended to be done in the preparatory schools is not systematic science, but rather a preparation for this. The kind of nature-study and observational work adopted in the various schools should differ according to their locality and other circumstances. This makes the subject a difficult one

for examination purposes, and anything of the nature of a rigid syllabus would have a deadening influence. But so important is this preliminary work that unless preparatory schools will adopt it without compulsion through examinations, the subject should form an essential part of the Common Entrance Examination. The questions set should cover a wide range and offer plenty of choice to the candidate.

It is of the utmost importance that every candidate for scholarships on entering a public school should be examined in such work, and that a high proportion of the total marks should reward him for good work in this subject. The reason for this is obvious. So long as science forms no part of the examination for scholarships, the cleverer boys at the preparatory schools will be tempted to neglect the subject, even when provision is made for teaching it, in order to specialise in more paying subjects. Having found these subjects pay, and having attained a certain proficiency in them, they are unlikely to wish to change to science, or to be allowed to do so if they wish. Thus the most clever boys are diverted from science quite early in their lives; it is not putting it too strongly to say that in the large majority of public schools only those boys who show no signs of becoming scholars in other subjects can take up science seriously. We see here the evils of early specialising in their most pronounced form.

#### MATHEMATICS IN THE PREPARATORY SCHOOLS.

It is a great aid to a boy's future progress in science if he becomes used, early in life, to take measurements for himself, especially if the measurements are made for the purpose of supplying data for the solution of problems. In this way, not only does the boy become familiar with the reading of scales and the mensuration of simple figures, and so on, but he also learns to apply his knowledge of mathematics as need arises. So far as science is concerned, the power of applying mathematics is almost as necessary as knowledge of the subject itself.

In 1909 a Joint Committee of the Mathematical Association and the Association of Public School Science Masters considered this question very fully and issued a report entitled "The Correlation of Mathematical and Science Teaching," which is published by Messrs. George Bell and Sons. This report gives in detail the kind of mensuration which it is desirable for a boy to do, both at his preparatory school and afterwards.

The mathematical papers in the Common Entrance Examination to the public schools should be set in such a way as to reward highly this kind of training.

#### ENGLISH IN PREPARATORY SCHOOLS.

New boys coming to public schools often show quite a surprising lack of ability to describe simple objects and phenomena. Science masters urge that more attention should be given to this at the preparatory schools, for at present the teaching of English seems to be directed almost entirely towards the future literary attainments of the boys. On the other hand, the value of descriptive work in science as a means of giving training in the writing of English should

not be lost sight of by the science masters. In this respect there should be co-operation between teachers of science and English both in the preparatory schools and in the public schools.

#### LACK OF APPRECIATION OF SCIENCE BY TEACHERS OF OTHER SUBJECTS.

One of the difficulties in attaining the ideals mentioned above lies in the fact that it is rare to find on the staffs of preparatory schools men who are sufficiently interested in science. It does not require a specialist to teach nature-study to small boys. But unfortunately in the past science training as part of liberal education has been so neglected that lack of interest is almost general except on the part of the specialists.

The same lack of appreciation is to be found in a large proportion of teachers of "form subjects" in the public schools. Although things are better than they were, even now masters often exert pressure to keep clever boys from taking up science, with the result that the dullards are driven to the laboratories. In future, no doubt, there will be improvement in this respect.

#### LEAVING SCHOLARSHIPS FROM SCHOOLS TO UNIVERSITIES.

The total value of scholarships given for science should not be less than that given for any other subject.

#### ENTRANCE EXAMINATIONS TO UNIVERSITIES AND EQUIVALENT SCHOOL CERTIFICATE EXAMINATIONS.

Compulsory Greek *must* be abolished. Science should take at least as important a place as Latin.

One of the worst things that can be done in these examinations is to group science with mathematics (as is suggested in recent Board of Education circulars and in the reports of the Previous Examination Syndicate). That means filling the upper science division of the schools with boys who are weak at mathematics, merely because of that weakness.

#### ENTRANCE SCHOLARSHIPS OFFERED BY THE UNIVERSITIES.

The work of schools is affected greatly by these examinations. In their present form these encourage boys to specialise too early. This statement applies to all the subjects of examination. There is little doubt that at present scholarship examinations are exerting a bad influence on general education.

With regard to science in particular, the examinations often have the effect of making boys specialise too strictly within the limits of the subject itself, to the detriment of their general training in science. If a boy knows, for instance, that he may get a scholarship in chemistry alone, he is tempted to neglect the study of kindred subjects. Scholarship papers should test the candidates' general knowledge of science more thoroughly than they do at present.

#### THE STAFFS OF SCHOOLS.

In many schools the number of science masters is too small. There is a present need for more science specialists. Later on, when even form masters may be able to assist in teaching science to the younger boys, the need may not be so great.

In the better-equipped schools it is usual to have laboratory assistants to do the more menial work connected with science teaching. But in some schools all this has to be done by the science masters.

Headmasters often have little idea of the amount of time required for devising and arranging demonstrations, etc., with the result that the masters are overworked. The duties of a science master frequently include:—

- (1) Actual teaching : about twenty-five hours a week.
- (2) Correcting written work and preparing lectures and apparatus.
- (3) Organising the laboratories (and sometimes cleaning them).

(4) Assisting in the general discipline of the school. He may be

- (5) A house-master.

It would be an advantage if he could be

(6) Engaged in research into the principles of education, and

(7) Engaged in scientific research.

Most of these activities are desirable; it surely is obvious that the time devoted to actual teaching work should be curtailed. This can only be done by increasing the number of teachers of science. The amount of science done in the schools must not be made less, nor must the classes be increased in size. These are often much too big as it is. Sixteen boys (on the average) are as many as one man can deal with effectively in the laboratory.

#### FEES.

Laboratory work is expensive. It is customary to take special charges for this. In schools where science is compulsory for all boys, the charges do not keep the boys from doing some science; but in some schools where science is not compulsory the charges have this effect. In certain instances the charges are grossly unfair (in view of the small expenditure in laboratory equipment), and the boys who learn science are robbed in order to provide cheap education for those who do none.

#### ORGANISATION.

In nearly every school the rate of a boy's progress through the various forms is controlled to an unfair extent by his proficiency in classical subjects. This might be improved by giving a better range of marks for science, but the real remedy is that boys should be grouped for science and mathematics separately from form subjects. Otherwise the logical sequence necessary for science must be broken.

#### CORRELATION OF MATHEMATICS WITH SCIENCE.

It is of the utmost importance that there should be co-operation between teachers of science and mathematics. To obtain this, more science masters should be teaching mathematics (*and vice versa*) than is the case at present.

It should never be forgotten that for the purposes of his science a boy not only needs to know some mathematics, but also should have the power of applying his knowledge. The extent of mathematical knowledge necessary for the science of an ordinary schoolboy is very limited.

Only a very small proportion of boys reap much benefit from training in pure mathematics, but all will need to apply some of their knowledge of the subject. This is becoming more generally recognised; but, unfortunately, tradition (supported by the university scholarship system) is very strong.

#### THE TEACHING OF MECHANICS.

This is in a most unsatisfactory position. The subject is fundamental for a right study of science. But, as a rule, it is in the hands of mathematicians, who too often do no experimental teaching and treat the subject deductively. Laboratory work in mechanics is essential, and either pressure must be put upon mathematical masters to teach inductively in the first instance or the subject must be handed over to the science masters. Since it would assist the co-ordination of science with mathematics, the former is the better plan.

#### LABORATORY EQUIPMENT.

During the past twenty years great improvement has been made with regard to equipment for science teaching. Laboratories for the teaching of practical mathematics, including mechanics, are now the most general need.

In certain schools, however, the laboratory accommodation for science is still hopelessly inadequate.

### THE DIRECT METHOD OF TEACHING LATIN.<sup>1</sup>

By ELEANOR PURDIE, Ph.D.  
Ladies' College, Cheltenham.

We introduced the direct method into the teaching of Latin at Cheltenham in September, 1913, when many of us were fresh from the inspiration of the summer school that had just been held at Cambridge, but our first year was necessarily a very transitional one, while the numbers then learning Latin—which is, with us, alternative to German—were little more than half what they are now. For practical purposes, therefore, I may omit the year 1913-14 and consider that we began our experiments, with numbers sufficient to found inferences upon, in September, 1914. It follows that what I have to say is based upon a short experience of some seven terms.

We do not, as a rule, employ the direct method with classes engaged in preparing for the London University examinations, or for the higher certificate, or Responsions. Hence, in the case of pupils who have not entered the college late, but have worked their way steadily up through it, the direct-method teaching extends normally over some four years; such pupils will have begun the subject at about twelve and a half. Very many girls, however, come to us later than this, in various stages of knowledge and ignorance of the subject, but very rarely with any acquaintance with the spoken language, and, therefore, have only two or three years, sometimes but one year, of direct-method work before proceeding to a class that is working for some external examination.

<sup>1</sup> A report on the direct-method work in Latin at the Cheltenham Ladies' College read at the meeting of the Association for the Reform of Latin Teaching held on January 5th, 1917.

Languages are taught at Cheltenham on the set or group system. Thus, girls in the middle school are grouped in several sets, mostly of the first or second year only, according to knowledge and capacity; girls in the upper school in a series of groups according to the line along which they are working; further, any pupil may begin Latin at any age. Consequently, the organisation of the direct-method work is a very complicated business, and it is not easy to secure for more than a year or two a solid body of direct-method trained girls, accustomed to work together and not interfered with by the admixture of new pupils with very different previous training. Again, the difficulty of securing an adequate number of experienced teachers, able and willing to work on direct-method lines, is often very great; at certain periods we require some eight or nine teachers all working at once in order to cope with the number of sets required for the best group of classes—a set consists of from twelve to eighteen—and all these must work on a definite syllabus towards a common end.

The amount of time given to the subject is relatively small; we have four lessons of thirty-eight to forty minutes a week, supplemented by two to two and a half hours of home-work. I enviously contrast this allowance with the six longer periods enjoyed by the boys of the Whitgift School, and with the eight or nine, or even twelve, periods that I find mentioned as given by certain forms in the Board of Education Report of 1910 on the teaching of Latin in the Perse School!

I have felt obliged to go into these details, first, in order to explain the humble nature of the results to which alone I am able to point, and, secondly, because, to practical teachers, details are essential if conditions are to be understood and any correct estimate of work done is to be formed.

#### GROUND COVERED IN THE FOUR YEARS' COURSE.

*First and Second Year.*—These I put together, as we find it takes our girls four or five terms, the length of time varying, of course, with the age and capacity of the pupils, to work through the course outlined in "Primus Annus," which is the book we have had in use throughout. This includes the forms and uses of all tenses of the indicative, active, passive, and deponent, the principal parts of a very large number of verbs, the declension of nouns, adjectives, and pronouns, with constant and extensive practice in the uses of the cases, the comparison of adjectives and adverbs, and the use of the relative pronoun, and some of the commonest conjunctions, together with various other points of syntax, including participles and the ablative absolute. Hand in hand with this goes the laying of a good vocabulary and much practice in simple composition, both oral and written. Those who are not familiar with "Primus Annus" can get a fuller conspectus of the ground covered by referring to the appendices with their Latin summary of accidence and syntax and their long lists of words with which the pupil has been familiarised.

The *sixth term* is devoted to the study of the sub-

junctive forms, active and passive, and of the following constructions—dependent statement, clauses of purpose, dependent desire, and dependent question. For reading-matter we use six short stories that we have compiled to accompany some of Mr. W. H. S. Jones's pictures, the stories being designed to introduce one by one the special constructions required, while the necessary exercises are drafted and reproduced by the individual teachers. Last year we found this syllabus almost too much to accomplish satisfactorily in one term, but we hope to manage better this year and begin the sixth-term work rather earlier, thus securing more time in which the complexities of the selected subjunctive uses may sink in.

Our *third-year* work brings us to what we still find the real crux of our direct-method problem—the first tackling of a real Latin author, whether simplified or otherwise to begin with, and the study of certain artificial constructions which the pupil can get on very well without in the simple routine of the class-room, but has perforce to acquire now if she is to find the reading of a prose author at all manageable—e.g. clauses of result, the mysteries of gerund and gerund-adjective (which I always find present great difficulty), *quominus* and *quin*, the perplexing variety of *cum* clauses, and the different types of conditional sentence, which, even in our own language, are seldom clearly realised.

At Cheltenham we are so placed that we cannot afford to postpone reading what I may call real, undiluted Latin at this stage, and for intelligent reading a clear apprehension of the more artificial syntactical constructions is imperative; it takes too long, and scarcely, I think, repays the time and effort spent upon it, to teach all the required constructions through Latin and to give adequate practice upon them in Latin only; meanwhile, they come tumbling thick and fast upon the bewildered pupil in her reading, and there is serious danger of haziness and confusion and consequent discouragement. At this stage, therefore, we frankly resort to a good deal of English, not necessarily in introducing the construction for the first time, but later, by way of summarising and of clearing away any confusion that has manifested itself; we also vary the helpful "paraphrase" type of exercise by the translation of sentences from English into Latin, such sentences being based either upon class-room experience or topics of the day (the war is a fruitful and invaluable theme!), or, more often, on the text under study. We find the use of English at this stage a real aid to clearness of thought and the solidifying and fixing of grammatical ideas, while translation from English to Latin is a useful exercise in comparison and contrast of idiom which can be safely indulged in from time to time when once the purpose of the new construction has been understood.

Next as to our *third-year reading*. Our great difficulty is, of course, to find any original Latin author that is easy enough for this transitional stage and at the same time interesting and valuable in itself. We have tried Mr. Sleeman's "Cæsar in Britain and Belgium," and various little books of simplified Livy, but hitherto all have been defaced

with English notes and vocabulary. At present we are experimenting with Mr. Dale's "Reges Consule Romani," which offers at least a unilingual vocabulary, though it contains no exercises of any kind; the text, which is unsimplified Livy, has been found very difficult, and progress has been slow during the first term. Our method is to explain the text in Latin first and to try to ensure, by every sort of question that we can devise, that both meaning and construction have been understood, but time is strictly limited, while the pupil's ingenuity in misunderstanding is almost unlimited, and we therefore have recourse finally to translation into English. This is sometimes worked out as home-work on paper, the versions being destroyed as soon as the passage has been gone through in English in class. We have found that this translation gives the girls confidence and greatly reduces the danger that the less intelligent will be walking in a dreary fog, professing to understand without any clear idea of what understanding really means, and it is obviously invaluable to the teacher as showing, before much mischief has been done, where misunderstanding has arisen through her own fault.

Let me pause here to review the position at the beginning of the third year and explain more fully why we find it advisable to admit translation at this stage in the short Latin life of our girls. We have found that the first two happy direct-method years have done much for them, making them take an interest in the language itself and in the subject-matter of what has been read that they rarely took before, but the direct method has not conquered for us the old, the almost insuperable, difficulty that they find in reading a Latin author for the first time; indeed, it has rather increased it, since by reading we now mean so much more than we meant of old. A habit of getting at the gist of the story has been formed, which is precious in that the pupil has now learned to look for sense and interest in what she reads, but this habit needs, we find, to be supplemented by translation if we are to secure, without undue expenditure of time, that the structure of every part of a complicated period has been understood, and that the pupil has some idea how to set about turning such a period into something like equivalent English idiom.

In spite of this, however, we hope we have abandoned translation in the old sense of a laborious effort to arrive at the meaning of a sentence by the help of ready-made translations in English notes and stereotyped phrases in vocabulary or dictionary, and by the perilous process which I find recommended in a well-known edition of Livy II., from which I take leave to quote the following:—"Whenever the statement seems long or complex, analyse the sentence carefully before translating it. After finding the main verb and its subject and object, if it has one, *in the usual way, sort out* clearly the other words and phrases!" How well we used to know that "*usual way*" and that "*sorting out*" and the confusion that resulted from that fatal attempt at premature analysis! I should like in passing to bear my witness to the difference in type of translation that is secured by the

method of explaining and questioning in Latin, and then leaving the pupil to work out for herself her own rendering of the meaning as it has presented itself to her. It has delighted me to notice in an end-of-term examination paper, in which two short passages of Livy were included for translation, how varied, within the limits of correctness, were the translations offered by the better girls. Even from pupils at the end of their seventh term I have acquired new lights on the meaning of the original from noticing the different ways in which it had appealed to them through the medium of the Latin explanation, while in the best papers I found a courage and reality in the English renderings from which my own pedantic type of accuracy at first shrank appalled, but ended by accepting with admiration.

Before leaving the third-year work, I must honestly admit that, in my opinion, it is not yet satisfactory; there does not exist, to my knowledge, any text edited on direct-method lines that is simple enough for the first term of this stage; at present all the work has to be prepared first in class, though it is here that one would like to begin to encourage pupils to exercise sometimes the independent effort of preparing initially for themselves, but this must appear to them at first a task impossible unless the Latin set is easy enough for ready mastery.

In the *fourth year* we attempt a verse author—e.g. portions of *Aeneid* II., or, rarely, selections from Ovid—and endeavour to finish the scheme of constructions, including such points as the uses of important subordinating conjunctions not yet studied, and a full treatment of *Oratio Obliqua*—also to begin systematic translation from English into Latin prose and written translation at sight from Latin into English. For the Virgil reading we have this year put a plain text into the hands of the girls, the teacher supplying for their use, sheet by sheet, Latin explanations of all difficulties that they are likely to find in the text; time has been lacking to prepare the set passage first in class, and we feel strongly that at this stage pupils should learn to do this work for themselves, so they have been expected to prepare some ten lines as half-an-hour's home-work, getting at the meaning so far as possible and at least realising where their difficulties lie.

Translation of passages previously worked out has been taken in class when opportunity offered, and portions have been afterwards written for home-work. During this first term of the year, I must admit, the results of this method have been somewhat disappointing; many of the set, which happens to consist this year of girls of rather a juvenile type of mind, generally profess to have understood very little, but the teacher attributes this largely to want of concentration on their part, and of patient effort to follow the written Latin explanations. Next term she proposes to allow translation in class immediately after each passage has been hammered out in Latin, clearing this off before a new passage is set, and occasionally following this up, as before, by written translation of a longer portion as home-work. Passages for translation into Latin prose have been made up by the teacher, mostly reproducing the Virgilian narrative, and introducing the special constructions under study at the time, as well

as others by way of revision, and this has been found more satisfactory than to use, as we have done previously in the fourth year, a book of passages which call for a vocabulary alien to the special study of the year.

On the vexed question of free composition, which, with us, generally takes the form of free reproduction, I need merely say that, though we still cling to it as a most stimulating exercise, experience has led us to be much more wary in the use of it and to introduce fixed limitations both in length and form.

Beyond the fourth year I have had experience in direct-method work only with *small* sets of girls: in the fifth year we read a few Odes of Horace and portions of Mr. Weatherhead's Selections from Livy, entitled "The Revolt and Fall of Capua"; in the sixth year, *Aeneid IV.*, as part of the higher-certificate course, the other higher-certificate book, *Livy I.*, being too long and too difficult to be attempted on direct-method lines in the time at our disposal. In taking the Livy selections in the fifth year, I was struck by the amount of the original text which a really good pupil could on this method assimilate and reproduce, and in reading the 4th *Aeneid* by the appreciation the girls showed of the book when we approached it through the medium of Latin. Personally, I felt I had never got pure joy out of either Virgil or Horace until I tried to study and explain them in their own language; for one thing, I realised that I had never before fully entered into their meaning, and I hope this deeper grasp on my own part helped to make our common study more effective and inspiring.

To sum up very briefly, I have striven to make it clear that my colleagues and I are no advocates of "talking Latin" for its own sake, but pursue the direct method, in so far as we do so, in order to give vitality to the study of the language and help our pupils to a firmer hold upon it and ultimately to a greater enjoyment and appreciation of its literature. We find that the interest which they take in the subject has very much increased since we adopted this method, and our most experienced teachers would be extremely unwilling to abandon it; indeed, I doubt whether, even if I wished, I could persuade them to do so. At the same time, from a variety of causes, we think it advisable to introduce considerable modifications into it in the third, and still more in the fourth, year. As regards the tangible results achieved, we note that the benefit of the direct method is felt at first chiefly in the composition, and that the first reading of a Latin author still means very hard work and has eventually to be helped out by translation into English; on the other hand, pupils appear to carry away from their reading infinitely more than used to be the case and to know their author much more thoroughly.

*Here and There Stories.* Senior. *Discovery and Commerce.* By D. W. Oates. 96 pp., illustrated. (Macmillan.) 6d.—This booklet is a brightly written account of the expansion of the known world, with an emphasis upon the British share in that progressive movement. Mr. Oates rightly insists throughout upon the importance of the merchant service, and inevitably leads to his final chapter, "Our Heritage—the Sea."

## THE REFORM OF ENGLISH SPELLING.

The following letter, signed on behalf of the Simplified Spelling Society by Prof. Gilbert Murray, Mr. William Archer, and Prof. Walter Rippmann, has been addressed to the Reconstruction Committee appointed by the Government to consider educational reorganisation:—

The Simplified Spelling Society has for the past eight years urged the importance of a reform of the English spelling. Two years ago it was decided to promote a petition for a Royal Commission to deal with this subject, but by establishing the Reconstruction Committee the Government has provided other means of considering suggestions for reform, and this society claims that the reform of English spelling is eminently one that merits the practical consideration of the committee.

If we adopted a rational spelling—that is, a reasonably consistent representation of good spoken English—

1. We should save at least a year in the education time of our children—a year that is much needed for the teaching of intrinsically valuable subjects.

2. We should be able to teach this essential subject in a reasonable and educative way, which would not necessitate the memorising of inconsistently spelled words nor inculcate wrong ideas.

3. We should secure clearer, better speech; for good speech would be the best preparation for correct spelling, and the spelling would be a constant reminder of good speech.

4. The speech training involved would facilitate the acquisition of foreign languages.

5. The difficult work of teaching defective children would be appreciably lightened.

It is particularly in the elementary schools that the grave drawbacks of the present spelling are felt, and teachers in these schools are eager for the reform. There is reason to believe that the rapid acquisition of the spelling by Italian children is due not to superior skill on the part of the teachers or to superior intelligence on the part of the children, but rather to the rational character of the Italian spelling.

The advantages to be derived from adopting a rational spelling would, however, not be confined to our own children. Many of our fellow-subjects are of alien race, and it is of great importance that they should learn our language. The task of bringing education to India, for instance, is much complicated by the difficulties presented by our spelling, which are all the greater for those who do not start with a knowledge of the spoken language. The movement for spelling reform has received support from all parts of the Empire where English is taught as a foreign language.

That English should be known to every member of the Empire is a justifiable ambition; and we may also look forward to its increasing use in the rest of the world. There is evidence to show that the desire to study English is becoming more common in almost all foreign countries. Its commercial value and the richness of its literature, together with the simplicity

of its grammar, explain its popularity, which, as all teachers abroad are agreed, would be vastly increased if the spelling gave real guidance to the pronunciation, instead of presenting countless irregularities that have no relation to the spoken language. At a recent educational conference Lord Bryce said:—"If English were simplified, it would in a generation become the language of commerce all over the East, with enormous benefit to British trade."

The above considerations have convinced the members of the Simplified Spelling Society and many others who have signed the petition that, to quote a resolution passed at the last Imperial Education Conference, "the simplification of English spelling is a matter of urgent importance in all parts of the Empire, calling for such practical steps in every country as may appear most conducive to the ultimate end in view—the creation, in connection with the subject, of an enlightened public opinion, and the direction of it to the maintenance, in its purity and simplicity among all English-speaking people, of the common English tongue." If this was true before the war, we submit that the arguments for an inquiry into the question of spelling reform have now gained in force and urgency.

The Simplified Spelling Society invites the Reconstruction Committee fully to consider this important item, and the society will gladly place at the disposal of the committee evidence as to the progress which the movement has made in the Empire and in the United States of America.

## ITEMS OF INTEREST.

### GENERAL.

EVENING play centres for public elementary-school children, promoted and organised by voluntary associations, have doubtless come under the notice of many of our readers. Under the Education (Administrative Provisions) Act of 1907 local education authorities were empowered to provide, and assist voluntary associations to provide, play centres for children attending school; but hitherto Government grants have not been available for the purpose. The recent increase of juvenile offences, which we noted in these columns last month, has, however, impelled the Board of Education to encourage the formation of centres by the offer of a grant extending to 50 per cent. of approved expenditure. The conditions on which grants will be paid are set forth in the Regulations for Evening Play Centres (Cd. 8,453) and in an explanatory memorandum (Circular 980). The memorandum wisely sets it down that the object of play centres is not merely to keep children out of harm's way, but also positively to influence character by providing opportunities of genuine play. The occupations and the vocabulary of ordinary school work are to be avoided, and the atmosphere and spirit of a well-ordered home are to be, so far as possible, cultivated. Practical suggestions are given regarding suitable occupations. The value of these centres manifestly depends much on the number and quality of the staff provided. It

is to be hoped that the payment of grants will result in the centres being so organised that the superintendents and their assistants will not be embarrassed by impossibly large groups of children.

"A DAY in a Montessori School" was the subject of a novel cinematographic demonstration given on February 12th to a large audience who attended by invitation at the West End Cinema, London. The film, produced under the supervision of Mr. C. A. Bang, of the Montessori Society, illustrated some thirty typical phases of the work of an infants' school where the programme of the Italian reformer is strictly followed. A current explanation of the pictures was given by Mrs. Lily Hutchinson, directress of the school. The exhibition was distinctly successful in its purpose of giving to persons who have not visited a "Montessori school" a fair idea of the scope and nature of the activities pursued therein. The thirty-five children who were "featured" in the film were seen as a free but well-ordered community of little people, going about their several businesses in an active and responsible way. The general character of the corporate and individual exercises came out very clearly, and it was possible for the audience to make useful notes on the mode of employment of the "didactic material." The children appeared in most cases either to have forgotten, or not to have known, that the eye of the camera was upon them, and displayed certain features of their psychology with amusing naturalness. Finally, it should be said that the pictures are calculated to remove the erroneous impression that self-instruction is the only teaching given in a Montessori school; the directress and her assistant were constantly shown in the act of correcting and stimulating their pupils' activities. Too much must not be expected of the cinematograph as a means of spreading new pedagogical ideas, but, as this demonstration has shown, it may, within a certain range, be very efficient.

THE trustees of the late Lord Kitchener, on the advice of Sir Guy Laking, Keeper of the King's Armoury and Keeper of the London Museum, have lent to the London County Council, for exhibition in the Horniman Museum, Forest Hill, the collection of Eastern weapons and armour made by Lord Kitchener, chiefly whilst he was Commander-in-Chief in India. Most of the weapons of Northern India and of the advanced peoples of other parts of India are represented in the collection, together with a few from Persia, China, Japan, the Sudan, and elsewhere. There are examples of chain-mail, plate-armour, helmets, and other typical specimens of Indian armour. The great variety of Indian decorative metal-work is well illustrated by the specimens in the collection, which is in course of arrangement at the museum, and may now be seen during the ordinary hours of opening. These are, at present, from 11 a.m. to 5.30 p.m. on weekdays, with the exception of Tuesdays, when the museum is closed to the public, and from 2 to 5.30 p.m. on Sundays. The museum may be reached by tram direct from Victoria or from Camberwell Green, and by train (L.B. and S.C. Railway) from London Bridge (to Forest Hill Station).

THE London County Council has published a tabular statement which indicates the average length of the "school age" of junior county scholars in the maintained and aided secondary schools of London. During the last decade the number of scholarships awarded has been reduced from 2,000 to 1,550. Out of ten scholars, on the average one stays only two years, one stays three years, one stays four years, one leaves during the fifth year, while six complete five years of life in a secondary school. It may be assumed, therefore, that approximately half the scholars pass matriculation or an equivalent examination, while some of the six who complete a five years' course pass on to the older universities. The table indicates that the boys and girls have the same average length of school life; and, further, shows a remarkable steadiness in the annual figures ever since 1905. There is, however, a slight diminution in the school life of the older scholars during 1915-16.

THE education of engineers formed the subject of an inquiry by a committee of the Manchester Association of Engineers. In its report the committee makes precise suggestions and attempts to outline the administrative machinery whereby the suggestions may become operative. The proposals are a valuable contribution to the question of the education of the adolescent. General education should continue to the age of fourteen, and each boy should produce a certificate of success at a standard school-leaving examination before he enters the engineering works. From fourteen to seventeen the boy should attend a school for two half-days a week, and should not attend evening classes. At seventeen the apprentice should be encouraged to attend evening classes two or three nights per week, and, possibly, the best of the part-time apprentices should be admitted to a day-time course on one day a week. Employers should pay wages for the day-time schooling, and should reward the boy for his progress and industry in the school, as well as in the works. In large works a "Boys' Friend" might well be employed to supervise the boys and guide their studies; in smaller works such work must be voluntary. It is thought that these proposals can be applied at once.

SHOULD teachers be members of an education authority? In this country the question is usually answered in the affirmative, but a recent inquiry by Dr. Scott Nearing, reported in the issue of *School and Society* for January 20th, with reference to the boards of education of the 131 cities of the United States, shows that, out of nearly a thousand board members, only eighteen are teachers, and these are usually college professors. About one-third of the members belong to the business classes, and two out of five of these are lawyers, and almost an equal number are doctors or dentists. Only 7 per cent. of the board members are women, and the smaller the city the less likely is its board of education to include a woman member. The whole inquiry shows that the members of the boards are chosen from five groups of professional or business occupations, and that practically five-sixths of the fully occupied population is

but meagrely represented upon the education authority.

TEACHERS of geography would do well to examine the report of an attempt made to ascertain the results of geography teaching in Boston as printed in the American *Journal of Geography* for January. The pupils selected were tested once on the United States, and again on Europe. Eleven per cent. of the pupils failed to locate either New York or San Francisco on a map, and half of them failed to account satisfactorily for the fact that the commerce of San Francisco is not so important as that of New York. Less than 9 per cent. earned two-thirds marks on the question, "Why does England import large quantities of wheat?" Only three per thousand could give satisfaction by their attempt to explain why the seaports of Russia are not so important as those of England. The report draws two valuable conclusions: first, that a definite minimum should be established regarding the places the location of which should be precisely known; and, secondly, that an attempt should be made to define to what extent and in what respects elementary-school pupils should be expected to reason on geographical data. The results emphasise the need for standard tests for measuring ability in geography.

INTERESTING figures regarding the provision of primary schools in India are given in the *Educational Review* (Madras) for November last. Throughout the provinces of British India the number of pupils per school ranges from 30 to 70, and the annual direct expenditure per pupil lies between 4s. and 13s. In Calcutta city half the children of school age are at school; in Bombay city the proportions are 43 and 28 per cent. respectively for boys and girls. In Madras city the Corporation has postponed the provision of schools because money is scarce, and the claims of sanitation are held to precede the claims of public education. Yet it is recorded that the state of affairs now in existence in Madras shows considerable improvement when compared with conditions in 1910. These facts are of considerable importance as an index of the state of public opinion regarding education. The secondary schools suffer in consequence. Despite attempts to make improvements, students undergoing higher education fail in large numbers at their examinations. Such failures are, in some quarters, ascribed to the local authorities, and they have culminated, in Madras, in a movement to substitute the examinations of London University for those of the local University.

IN *School Science and Mathematics* (vol. xvii., No. 1) for January, it is announced that separate departments, each under its own editor, have been arranged for this periodical; the departments are: research in physics, general science, and mathematics questions. The current number contains several contributions which will be useful to teachers of science; the titles of some of these are:—"How Round is the Shape of the Earth?" "Modern Developments in

Elementary and Secondary Mathematics," "Short Stories of Great Inventions," and "The New World of the Electron."

### SCOTTISH.

SIR HENRY CRAIK is not likely to forget his Glasgow meeting. He had a packed and enthusiastic audience, some 1,500 all told, and all of them anxious to show their appreciation of the splendid services Sir Henry is rendering to the profession by voice and pen. They hung on his every word and caught up his points and voted their approval almost before these were completed. His subject was "Schools and the Work Before Them." At the outset he protested against the proposal to throw our whole educational system into the crucible. They had good reason to be proud of what had been achieved by the products of their schools, and it would be folly to scrap indiscriminately the system responsible for them. Dealing with the rival claims of science and the humanities, he made no secret of his belief in the classics as the best training ground for mental development. In support of this position he called up as witnesses the late Lord Kelvin and Mr. Hichens. The former, in one of his last speeches, expressed his belief in the value of a classical training as preparation for a scientific career, and deprecated the over-hasty zeal of those parents who wished for their sons an early initiation into the mysteries of electricity. Mr. Hichens, he said, at a recent conference in London, shocked the men of science by denouncing specialisation at school, and entering a plea for a training that would give stability and moral strength of character. Finally, Sir Henry declared that the teachers were the pivot of the whole educational system, yet "we have always underpaid and starved our teachers." In the interests of the whole Empire there must be a complete change of attitude towards the teacher, otherwise they would not attract into the profession its due share of the moral and intellectual fibre of the nation.

PROF. SODDY, who was recently appointed to the chair of chemistry in Aberdeen University, has published, in the January issue of *Science Progress*, a scathing attack upon the Carnegie Trust and all its ways and works. His main contention is that the grants from the trust are not being applied to the primary object as declared in the constitution, "improving and extending the opportunities for scientific study and research." In his own university he states that only 23 per cent. is so applied, while the balance is spent on ancillary subjects and on objects entirely outside the scope of the trust. Prof. Soddy certainly seems to have made out a case for investigation, and it is well that the intromissions of public trustees should receive the most careful scrutiny of all competent to offer an opinion. It is entirely owing to the lack of this criticism in the past that so many foundations have been diverted from their original objects. Less sympathy will be felt for that part of Prof. Soddy's article attacking the personnel of the trust. He declares that to the majority of the members "the words *science* and *scientific research* mean little more than the letters out of which the words are composed,"

and he further hints that the ignorance of the trustees is not compensated for by scientific knowledge on the part of the secretary. Finally, Prof. Soddy complains that the form in which the accounts of the various universities are kept does not make for straightforward book-keeping. Here also a case for investigation seems to be made out, but there is throughout the whole article distinct evidence of exaggerated statement and unbalanced judgment.

THE action of Moffat School Board in dismissing the rector of the academy because he responded to the call for military service has roused a storm of indignation in the district and among the teaching profession generally. Mr. Ritchie, prior to the war, was an O.T.C. officer and assistant in George Watson's School, Edinburgh. In August, 1914, he was appointed to the rectorship of Moffat Academy. The board admits that he informed it that he held a commission in the O.T.C., but maintains that he assured it that he would be one of the last to be called up. Later on the board pressed Mr. Ritchie to resign his commission, but this naturally he declined to do, as to resign a commission in time of war is almost tantamount to cowardice. Finally, when Mr. Ritchie was gazetted to a battalion and joined up, the board instantly declared his place vacant and advertised for a successor. It is almost inconceivable that a public body should thus seek to penalise patriotism at a time when every fit man is needed for the Army. But no one with a knowledge of the meanness, pettiness, and harshness that some school boards have been capable of will be surprised. Fortunately, the school board is not representative of the community, as at a largely attended public meeting, after the case had been stated at great length, both for the school board and the teacher, a resolution was passed, with but a few dissentients, declaring "that the treatment meted out to Mr. Ritchie is contrary to public policy and to the wishes of the ratepayers of Moffat, and that the school board be requested to make such arrangements as will secure that Mr. Ritchie's position as headmaster be kept open for him." There the matter rests meanwhile.

LORD HALDANE, in pursuance of his declared rôle of missionary of education, addressed the Perthshire Branch of the Educational Institute at Perth on the subject of "Education after the War." As is well known, Lord Haldane is one of the chief members of the Reconstruction Committee, and it is possible to glean from his remarks the tendency of official opinion on the subject of education. Enlarged school board areas, a National Advisory Council, and compulsory continuation education from fourteen to eighteen years of age would seem from his remarks to have a strong body of opinion behind them, and in any scheme of reform it is fairly certain these features will find a place. Lord Haldane had a good deal to say in regard to the position of the teacher. They must, he said, make the profession of teaching a great profession, not in its own interests, but in the interests of the State. They must make the profession so honourable, so esteemed, and so important that numbers would flock to it instead of shunning it, as they

did to-day. They must not only pay the teachers better, but they must open up for them avenues of promotion such as would satisfy the ambition of able men and women.

THE volume of discussion on educational topics is ever being added to from fresh sources. The Advisory Council of the Scottish Labour Party is the latest contributor. It invited to a conference in Glasgow all Labour members of Scottish school boards, and gave a general invitation to all others interested to attend. There was a large gathering, thoroughly representative of all parts of Scotland. Mr. Robert Smillie, chairman of the Scottish Labour Party Executive, presided. The discussion and the resolutions arrived at were in general line with the policy advocated by the various associations of teachers. The raising of the school age to sixteen, the reduction in the size of classes, and the establishment of compulsory continuation education up to eighteen years, all received hearty support, and were approved with scarcely a dissentient voice. On one question, however, the conference parted company with expert opinion. It opposed the abolition of the school board system and approved the retention of small school boards. This, from the nature of the gathering, was perhaps inevitable. It is perhaps too much to expect poor weak human nature to vote for its own dissolution, and many of the audience represented boards that had no chance of survival under any rational scheme of consolidation. Teachers are not much concerned with this opposition, as school boards are more and more proving their unfitness for carrying on the work of education on modern lines.

#### IRISH.

THE Board of Intermediate Education has finally decided not to make any change in the new rule that candidates in experimental science at the examinations in June must pass on a written paper. The decision will not give general satisfaction. The system of passing by inspection has worked so well and so smoothly, and is in principle so superior to passing by a written external examination, that it would have been preferable to have adhered to it, with such modifications, if necessary, as would have satisfied the requirements of the Intermediate Board that every candidate for a pass at its examinations should submit to an individual test. It is to be regretted that the Department, no doubt for good reasons, a few years ago modified its system, so that in many schools pass candidates were not tested at a final inspection towards the end of the school year; but the Department's officials have recently expressed their willingness to satisfy the wishes of the Intermediate Board in this respect, and it is to be hoped that this arrangement will be accepted for next year by the Intermediate Commissioners. It may be that it was thought to be too far on in the school year for any change to be made for June of this year, but this cannot apply to next year's rules. It is known, too, that the Department is reconsidering its school programmes in experimental science, and when it has decided what it will do, the question of the conditions for passing in ex-

perimental science at the intermediate examinations should be reconsidered and finally settled.

THE National University of Ireland has issued a special note with reference to the standard of Latin in the matriculation examination. The examiner in Latin has directed attention to the answering in this subject as being often of an extremely poor quality and as showing that some candidates are very inadequately prepared in it. It appears that a fairly large number of candidates who have not learnt Latin as a regular school subject try to make up the course in a very short time before matriculation. The Senate therefore wishes to make it known that it desires to maintain strictly the standard of passing in Latin as in all other subjects, and to point out that to attain this standard careful preparation is absolutely essential, and must extend over a far longer period than many candidates seem to devote to it at present.

THE annual meetings of the Classical Association of Ireland were held this year as usual on the last Friday in January in the lecture theatre of the Royal Dublin Society. At the public meeting the chair was taken by the retiring president, Mr. J. I. Beare, fellow of Trinity College, and the new president, the Very Rev. T. V. Nolan, S.J. Provincial, delivered his inaugural address on "Aristotle and the Schoolmen." The English and Scottish Classical Associations were both represented by excellent speakers, the former by Prof. E. A. Sonnenschein, of Birmingham, one of its vice-presidents, and the latter by Prof. J. S. Phillimore, of Glasgow University. The president for 1918 will be Mr. J. Thompson, headmaster of the High School, Dublin, who was for ten years the honorary secretary. The hon. secretaries for the present year are Mr. E. H. Alton, fellow of Trinity College, and Prof. P. Semple, of University College, Dublin.

THE annual meeting of the Schoolmistresses' Association was held on February 9th at Alexandra College, Dublin, when the officers were elected, and a lecture on "School Horticulture" was delivered by Prof. D. Houston, of the Royal College of Science.

THE Department of Agriculture and Technical Instruction has issued the time-table of the Technical School Examinations for 1917, which will be held in May in different courses. The courses are in commerce, building trades, applied chemistry, electrical engineering, mechanical engineering, domestic economy, and art. There will also be special examinations for teachers' certificates in art. It has also issued a form containing the general regulations governing the conduct of these examinations, which gives full particulars and may be obtained on application.

THE Department will also in June award a limited number of trade scholarships. The object of these scholarships is to enable selected persons who have been engaged in certain specified industries in Ireland for at least two years to obtain systematic instruction in the principles of science and art as applied to these industries. It is hoped in this way to raise the

standard of workmanship and thus to benefit the industry. The scholarships will be tenable for one school year of twenty-eight to thirty-six weeks, and will be of the value of £1 per week in addition to class fees and travelling expenses. Candidates, who must be above seventeen years of age and have attained a reasonable standard of education, are to be nominated by their employers.

#### WELSH.

The Carmarthenshire Education Committee has appointed Mr. G. J. Thomas to the headmastership of Llanelly County School, rendered vacant by the death of Mr. William Lewis. Mr. Lewis, whose loss is deplored by all who knew him, carried out some remarkable experiments in school government, and did valuable work as a member of the Central Board and of the University Court. There were twenty-six applicants for the vacant post; a "short list" of three was chosen from the number, the other two being Messrs. H. E. Evans, of Carmarthen, and D. S. Richards, of Narberth. Mr. Thomas, who is a lieutenant in the Welsh Regiment, was educated at Copperworks Council School, Llanelli, Aberystwyth College, and Jesus College, Oxford; he left a mastership at Trent College in the Army.

MARY MACKWORTH has presented to all the schools in Cardiff copies of a booklet, "A Nation's Heroes," containing an account of the lives of the men and women represented by the statues presented by her father, Lord Rhondda, and placed in the City Hall. It has been decided to have the building open from 10.30 to 4 o'clock on one Saturday in each month in order to give working people an opportunity of seeing the statues.

A CERTAIN town in Wales has two intermediate schools. The boys' school has kitchen gardens, and pigs and fowls are kept. Not to be outdone in patriotic effort, the headmistress of the girls' school applied for permission to keep pigs and goats. Her application was refused, so far as goats were concerned; the question of pigs was referred to the County Education Committee.

THERE is in most secondary-school schemes a provision that the vacancies occurring in the headship shall be filled up after advertisement. This requires amendment in the sense of calling for advertisement in recognised and widely read educational papers, instead of merely in insignificant journals with an entirely local circulation. Replying to some outspoken criticism, a member of a North Wales Education Committee protested that never during his experience of the work had religious opinions or any unfair influence been allowed weight in the appointment of teachers. This is probably very generally true in the case of assistantships; but as to the more valuable posts, it has in fact, been possible to predict almost certainly where the choice would fall in every important secondary-school appointment in one county for about ten years, and it is at this moment known who is to have the first place of a certain class that becomes vacant in another county.

STRENuous efforts continue to be made in order to secure that the remodelled education after the war

shall bear as close a relation as possible to national needs and to real life. Cardiff Chamber of Trade is to bring before the University Commission the need for a comprehensive training for young people employed in the distributive trades, and also to petition the Home Office to make permanent the order for the early closing of shops. Glamorgan County Council received and approved a resolution from the recent Educational Conference at Shrewsbury deprecating the setting up of a Welsh University that was not under democratic control. A strong committee of business men is being formed to secure co-operation between educational and commercial interests in South Wales. The committee will confer with representatives of the various university and technical colleges, and lay its conclusions before the Royal Commission. The Commission met on January 25th and 26th to hear evidence, and received representatives of Aberystwyth College, Newport Education Committee, the National Union of Teachers, the Association of Assistant-masters in Secondary Schools, and the Merthyr Education Committee.

THE financial position of teachers and their treatment by the education authorities are still causing great agitation; in fact, the country is seething with discontent, and it is only reluctance to show an unpatriotic spirit that is holding the hands of the teachers until after the war. They are prepared to make sacrifices, and have done so; but they have to live in communities the members of which are prospering as they never did before, and by this very prosperity sending up prices, while all they can themselves do is to watch their own miserable salaries—"wages" as the newspapers delight to call them—dwindling in purchasing power. It is possible for a boy of no particular aptitude to leave school at the age of sixteen for a job better paid than that of the man who has been teaching him and other boys for twenty years. And the wretched sums given as war bonuses, "to meet the extra cost of living," do not, in the case of either elementary- or secondary-school teachers, meet a quarter of the need. No teacher has yet received a bonus equal to that given to the railwaymen, in their case also "to meet the increased cost of living." The one hopeful sign is that everyone is beginning to see that something will have to be done in the matter.

IN discussing the proposed appointment of an inspector by the Cardiff Education Committee, Mr. A. C. Kirk, chairman of the School Management Committee, ridiculed the idea of the headmasters and headmistresses reporting on their own work, and added that there was in the city a feeling that the heads of the departments did very little work themselves. The headmasters protested, in a letter to the papers, against Mr. Kirk's "unjust and insulting remarks," and advised him to make himself acquainted with the working of the schools instead of making public comments calculated to undermine their authority and interfere with discipline. The committee decided to reply that the chairman was within his rights in making the remarks, and that the spirit of the letter was resented. In the course of the discussion Mr. Sydney Jenkins made the statement that

the headmasters "ought to be reminded of the right of public men to criticise their own employees." The assertion implied in the last three words is a delusion under which many "public men" seem to labour.

### A FIRST GREEK BOOK.

*Deigma: a First Greek Book.* By Profs. C. F. Walters and R. S. Conway, with the co-operation of Constance I. Daniell. xxiv+408 pp. (Murray.) 3s. 6d.

THIS book is intended for students who begin Greek in school at fifteen or sixteen, or somewhat later in the new universities. It includes practically all the accidence, even something of the non-Attic dialects; since the editors rightly observe that certain writers, who are well suited in themselves for early study, do not write in Attic. It includes all the rules of syntax which are needed for authors of the fifth or fourth century, and some that will be useful for Homer. There are also Greek and English vocabularies. The course is estimated to take two years.

The book contains a great deal more than is usual in school-books for beginners. It has many good features. For one thing, the long *a*, *u*, and *v* are marked; for another, it is scholarly and accurate above the standard of most books. An instance of the minute care taken is seen in the note on *φιλέτερος*, p. 94, and the metrical rule (2) on p. 259. Philological notes are often given, and they are good; they also do no harm, for they need not be read unless the pupil happens to be curious in that matter. English derivatives are also given—another useful thing. There are some novelties of arrangement; thus, the middle inflection comes early (but why is the dual put after the plural in the tables? There is no reason for this, and good reason against it); and the second declension comes before the first. Only use can prove whether these are wise changes; it is good early to get a hint of as much variety as possible, that is true. But the general plan of the work is that of a book; it is not arranged for those who wish to use the Greek language, or the article would come at the beginning. There would also be a phrase given for "I thank you"; we have it in the Greek (p. 269: *εὐ ἐποίησας*), but stiffly rendered "*You did well.*" The editors express a belief that their book may be useful for teaching by the direct method, but that is a mistake; it is only useful for the customary method of writing and reading.

The English exercises are of the familiar type, disconnected sentences to illustrate forms and constructions; but the Greek exercises soon begin to give a connected story, and these stories bear on Greek history or literature. A number of the later ones are adapted passages from Greek authors (the sources might have been given). This is the best part of the book, in our opinion; its drawback is that it gives only scraps, after all, and we prefer a book which will take the pupil to the authors themselves in the second year.

In a book generally so accurate it is not out of place to offer a few suggestions in detail. Are not the terms "epsilon" and "hypsilon" contrasted with *εἰ δασύ* and *ἢ δασύ*, referring not to length or "lightness" at all? The pronunciation of French *é* is not that of English *ey* in *grey* (p. 5), which is a diphthong. Greek *ε*. The grave accent of modern texts is not ancient at all (p. 8); grave is the syllable without accent, and it is a pity we have invented a needless complication. The book is carefully printed, and we have noted no misprints in our survey. But it is a little trying to the eye, especially the vocabulary.

### SOME SCHOOL READERS ON HYGIENE.

(1) *Fighting Dirt: a Hygiene Reader.* By Ernest Hood. 224 pp. (Harrap.) 1s. 8d.

(2) *Health and Safety.* By F. G. Jewett. viii+1 pp. (Ginn.) 2s.

(3) *Physiology, Hygiene, and Sanitation.* By F. G. Jewett. xiv+307 pp. (Ginn.) 3s.

(4) *Food and Health.* By Helen Kinne and Anna M. Cooley. vi+312 pp. (New York: The Macmillan Co.) 3s. net.

THE four books enumerated are excellent examples of the success with which questions of personal health can be made to appeal to the interest of school children. Each is well printed and attractively illustrated, besides being written in a style which insures the continued attention and curiosity of an intelligent pupil.

(1) Mr. Hood's method is to appeal to the fighting instinct of the reader and to enlist it on behalf of a crusade against disease germs. He believes that children are "more interested in soldiers than in seed and therefore the pictures, the titles of the chapters and the style of the writing all insist that healthy living is only rendered possible by an unwearying fight—that, namely, against the invisible foes which lurk in "dirt." The facts are set forth in picturesque language, while sketches illustrating the European conflict are made to point morals on the great war against disease, which it is the special business of such books to train children to wage.

(2) In "Health and Safety," also, the main object of the book is to inculcate true cleanliness in personal habits, and it is made clear again that the real object is the circumvention of the bacteria of disease. "All this, however, care is taken not to alarm the reader more than enough to forearm him against his worst foe—the microbe." Other topics dealt with are the dangers of alcoholic beverages, the gospel of fresh air and methods of efficient ventilation, the treatment of such everyday accidents as bruises, cut broken bones, sprains, etc., and rules for action in various other emergencies.

(3) This book, by the same author, is evidently intended for older pupils. Its early chapters lay stress on right habits of sitting, standing, and walking, and the effects on the growth of the body. The work of the circulatory, digestive, and nervous systems is next considered in an elementary manner, with such associated subjects as food and dietaries, and sanitation. A specially useful chapter is that on the methods of transmission of some common diseases, particular attention being paid to tuberculosis and typhoid fever. A series of questions on the text, given at the end of the chapters, will be helpful to teachers. The book may be recommended cordially, not only for its accurate treatment of matters of first-rate importance in hygiene, but also for the skill with which they are presented to young readers.

(4) Two earlier books by the authors of "Food and Health" have already been commended in THE SCHOOL WORLD, and the present volume, which bears the appropriate sub-title of "An Elementary Text-book of Home-making," shows all the good qualities of its predecessors. It is mainly concerned with food problems and the preparation of food at school and at home, for which an abundance of simple recipes is given. The matter is helpfully arranged in schemes of meals—breakfast, luncheon, dinner, and supper—and is treated in a chatty style, in which detailed practical instructions are skilfully associated with clear explanations of the procedure adopted and of the reasons for selecting certain dishes in preference.

each. Each lesson is provided with simple exercises and problems to be worked out by the pupils. These are framed as to encourage independent thought and initiative, and are of high educational value. The book contains 130 unusually helpful diagrams and illustrations, and will no doubt take a deservedly place among school books on domestic management.

## RECENT SCHOOL BOOKS AND APPARATUS.

### English.

*Sohrab and Rustum.* Edited by W. J. Pyke, with a foreword by Sir A. T. Quiller-Couch. 48 pp. (Cambridge University Press.) 1s.—The notes and introduction to the famous poem are, if taken together, sufficient for school work; but the episode from "The King of Kings" will bear a little more annotation. Arnold expressly refused to look at any verse on Sohrab; but the modern reader may well ask for a little more information both about the story and about the peculiar fondness in semi-European, semi-Asiatic literature for the death of the son at the father's hand. To teachers of English the story is nothing, but few schools can be expected to understand thoroughly Arnold's majestic and melancholy line. The book helps now and then with the pronunciation of such far-some names, but he leaves Sohrab (which is still pronounced wrongly and unmusically) unhelped. The shape of this series is one that might have followed more consistently in the make of other texts; children have an undefined but real appreciation of shape in books.

*English Dictations for Home Work.* By Hardiman O'Grady. viii+56 pp. (Constable.) 1s. 4d.—This book consists of sixty-six passages in the transcription of the International Phonetic Association, most of which only full-stops are given, and of ten pages in ordinary spelling, printed without punctuation. It is intended to afford practice in the conventional spelling, of which the author disclaims approval. It is not intended as a phonetic reader, "a purpose for which it is altogether unsuited." We do not say the book should not have been so compiled as to serve both purposes; and, in any case, it is desirable that such a book should be carefully printed. Unfortunately, there are many slips and inconsistencies in the phonetic texts. The stressing appears erratic; on the first page there is a sentence of two words without a single stress mark; "ee" is repeatedly stressed on the first syllable, occasionally the mark of half-length has taken the place of the stress mark. As regards the notation of vowels, a: is frequently given instead of a:, the forms of "eer" and "oor" are represented in various ways, syllabic "l" and "n" scarcely appear at all. The author shows much uncertainty in his treatment of unstressed syllables; he gives three different forms of each of the following:—"tion, -ers, -ain, -est." He very frequently gives the long vowel where, in southern English, the lax vowel is more common. In addition, there are a number of misprints. It is true that inaccuracies of this kind would be more serious in a book that professed to be a phonetic reader, and do not impair its value as tests of the power to spell in the ordinary

*Book for the Young.* Translated by Mrs. R. S. 2s. 6d. 200 pp. (Kegan Paul.) 2s. 6d.—This is quite the first attempt, but one of the first,

to bring some Russian stories into the schools. We welcome it without reserve. The choice of stories, the translation, the admirable illustrations by Michel Sevier, demand nothing but praise. Three of the stories, "Ivan the Fool," "Three Questions," and "Where There is Love," are probably well known to readers, the other three less known. We should like to have seen the story of the hermits on the island, and "Esarhaddon" might well arrest the child; but we cannot complain that the tales here told are not representative. There is no reason why the wonderful "Tarass Bulba," of which a really good translation is needed, should not be published for schools. The text chosen should be a composite one from the two variants of the story, and the translation should be in the hands of one who knows his Homer. Other parts of Gogol's "Farm Stories" might follow.

### History.

*Outlines of Medieval History.* By C. W. P. Orton. xii+585 pp. (Cambridge University Press.) 10s. 6d. net.—There are so few English text-books on medieval European history that a new one by a competent scholar is cordially to be welcomed. Mr. Orton, a fellow of St. John's College, Cambridge, made a name for himself as a skilled investigator of the Middle Ages by the publication, four years ago, of his learned monograph on the House of Savoy. The present is, of course, a work of a widely different character. It is necessarily in the main a summary of the researches of other men, and its compass leaves little room for evidence of original reading, even if such has been pursued. Mr. Orton's history provides a sketch of the development of Europe from 395 to 1492. For the most part a chronological order is adopted, and there are but few digressions from the political pathway into the fields of social, economic, and intellectual activity. It is a good feature that Eastern Europe is not neglected, although the difference of its evolution from that of Western Europe is properly and clearly emphasised. The book contains no references, no suggestions for further reading, no bibliography—three grave defects in a work which should be merely introductory to ampler study. Nevertheless, it will serve the useful purpose of providing within the limits of a single volume a concise and readable survey of the Middle Ages for such as do not wish to pursue the subject into fuller detail.

*Children of the Empire.* By C. G. Hartley and A. D. Lewis. 96 pp. (Werner Laurie.)—The title of this book, "Children of the Empire," indicates, not the subject of the volume, but the persons for whom it has been written. It is an elementary textbook of patriotism, especially adapted to the circumstances of the present time. In a series of brief and simple chapters England and its government are described, the Overseas Dominions and Dependencies depicted, and the causes and significance of the war discussed. A dozen photographic illustrations add attractiveness to the book. Lord Sydenham commends it as likely "to do great good at the present moment."

*Progress and History.* Essays arranged and edited by F. S. Marvin. 314 pp. (Oxford University Press.) 8s. 6d. net.—Last year Mr. Marvin edited a similar volume of essays entitled "The Unity of Western Civilisation." It rightly commanded considerable attention, for it contained some able and brilliant writing by a number of distinguished men. Its general purpose was to emphasise the solidarity of the European peoples in spite of the fact that they were at the time of writing engaged upon a fratricidal civil war. The leading idea of the present series is "progress," which Mr. Marvin defines as a movement

involving increase of knowledge, increase of power, and increase in appreciation of the humanity of others. The first three essays deal with the progressive elements evident in the three great epochs, prehistoric, classical, and medieval. The remaining essays relate more particularly to modern times. They divide the subject of progress topically, and treat it under the heads of religion, morality, politics, industry, science, art, and philosophy. Such names as those of Dr. A. J. Carlyle, Baron von Hügel, Principal L. P. Jacks, and Prof. J. A. Smith among the contributors are a guarantee of sound and suggestive writing. It is curious to find that these thoughtful and sane essays were first delivered in the form of lectures at the Woodbrooke Settlement, Birmingham. One wonders who in such a home of conscientious objectors could be found to understand or appreciate them.

*Why Britain Went to War.* By Sir Edward Parrott. 224 pp. (Nelson.) 1s. 6d.—Sir Edward Parrott has essayed and accomplished successfully a difficult task. It is the task of conveying to children, particularly to such as come within the age limits of the elementary schools, some conception of the antecedents and causes of the great war. Since their ordinary course of historical reading includes little or no information concerning Europe as a whole, it is necessary to sketch in outline the leading facts of nineteenth-century Continental development. This Sir Edward Parrott has done with considerable skill. In a series of chapters centring round Napoleon, Bismarck, the Kaiser, and other prominent figures, he has sketched the main incidents necessary for a comprehension of the present catastrophe. Then, on the basis of this sketch, he has explained the meaning of the war, and has shown how inevitable was Britain's participation in it. Though the book is intended for children, it will—like so many of the better class of school books—prove to be both interesting and instructive to many adults.

### Geography.

*Highways and Byways in Nottinghamshire.* By J. B. Firth. With illustrations by F. L. Griggs. 426 pp. (Macmillan.) 6s.—To Mr. Firth's "way of thinking, a place which has little recorded history is cold, whatever its charm, compared with those which are indissolubly linked to our regard by a long chain of human associations." This is the spirit in which Mr. Firth guides the reader from place to place in Nottinghamshire. Strategically of importance in the Great Civil War, historically the seat of many great English families in and around the Dukeries, royally of interest on account of Ethelfleda, John, and Charles I., economically valuable because of the highway of the Trent, the Great North Road, and the later East Coast Railway, ecclesiastically unique in connection with Southwell, Nottinghamshire provides Mr. Firth with a supply of material from which he yields to the reader full measure. Byron, Colonel Hutchinson, the Dukes of Newcastle, Norfolk, and Portland, Wolsey, Dean Hole, are but a few of the many people who provide the human associations attached to Newstead, Southwell, etc. Mr. Griggs's illustrations bring home to the reader the pleasant charm of the county, and the maps, reproduced from the Ordnance Survey, will assist the reader who is not personally familiar with the byways of this Midland shire.

*Common Commodities of Commerce. Paper: its History, Sources, and Manufacture.* By H. A. Mad-dox. 150+viii pp., illustrated. (Pitman.) 2s.—Like the other books in this series, the volume on paper contains a large amount of information which is conveyed to the reader succinctly and readably. The

historical introduction is of great interest, and chapter on the varieties of fibres which are used indicates the degrees of utility of esparto, jute, bamboo, man and ramie in competition with the fibres obtained from rags and from trees. High-grade paper is hand-made and perfect cleanliness is essential; hence the water must be pure and free from smoke, dust, and other impurities; this last fact governs the situation of paper mills. There is abundant material for less on the complexity of modern manufacturing processes.

*Sketch Maps, Illustrating Important Phases in Great War, with Historical Notes.* August, 1914—May 1916. By P. R. Clauss. 29 pp. (Blackie.) 1s. 6d.—This is a useful publication; the maps are clear outline sketches without contours or hill-shading, showing town sites, railways, and rivers. Each map is faced with chronological notes, and the whole deals summarily with the first two years of the war, with slight incursions into 1916.

### Mathematics.

*Housecraft Arithmetic.* By T. Mellor and H. Pearson. 112 pp. (Longmans.) 1s. 6d.; with Answers 2s.—This is an admirable little book. It is thorough and practical, explaining clearly and concisely the application of arithmetic to the problems of everyday life. Although designed primarily for the use of candidates for the housecraft certificate of the northern universities, it is well suited for use in a much wider circle, as the information it contains relates to matters about which no one can afford to be ignorant. There is really urgent need that every boy and girl should receive instruction in such a course of arithmetic as that contained in this book, for it may be said that calculation is the mother of economy.

*The Supervision of Arithmetic.* By W. A. Jessen and L. D. Coffman. 217 pp. (New York: The Macmillan Co.) 5s. net.—In this book the authors present the results of very extensive investigation upon which they have been engaged relating to matters connected with the teaching of arithmetic in the schools of the United States of America. The difficulties which confront teachers on the two sides of the Atlantic may not perhaps be identical, but in the broader aspects they are sufficiently alike to render interchange of experience valuable. In the foreword stands the question of the subject-matter of arithmetic and the balancing of its two aspects as an intellectual discipline and as an instrument for practical use. It appears that American teachers are being urged to pay greater attention to the latter aspect. "While it is not recommended that classroom teachers resign the purpose of familiarising themselves with the commercial phase of arithmetic, it is urged that they take the steps necessary to secure this knowledge. Teachers might profitably interview bankers, insurance solicitors, public accountants, and brokers." Descending to details, the authors show in tabular form and also graphically the results of inquiries as to topics to be retained or eliminated. Some of these topics are to be found in our school books. The breadth of the States explains the universal demand for the retention of longitude and time. There is equal unanimity in demanding the elimination of unreal fractions and alligation. The time devoted to arithmetic varies greatly in different schools, ranging from 6 to 20 per cent. of the total school time, the average being 15 per cent. A comparison is made with the time devoted to the subject in similar schools in other countries, the percentages for England, Germany, and France being given as 20, 18, and 15 per cent. respectively. These numbers bear testimony to the value of the metric system. Considerable space is given to the discuss-

methods of teaching and of text-books, but the final chapter, on "Tests and Results," will probably be the one that contains suggestions and ideas of greatest value to teachers in this country.

### Science and Technology.

*The Elements of Engineering Drawing.* By E. Heath. xii+131 pp. (Methuen.) 2s. 6d. net. This book is intended to serve as an introduction to engineering drawing to students in junior technical colleges, and to those who obtain their preliminary training in colleges and secondary schools. The first four sections into which the book is divided are devoted to instruction in the use of instruments and problems in plane geometry. These problems have been carefully selected and graded in difficulty so as to give the student opportunities of obtaining skill in the use of his instruments. In the second section methods of projection are explained and illustrated so far as possible by examples of engineering details in reference to the usual cones, prisms, etc. The third section contains examples of fastenings, and the fourth some more complicated examples of engineering details. Many students have considerable difficulty in dimensioning of drawings; such will find many valuable hints in the book. Pictorial views of many of the details are given, as well as ordinary sketches; these will be of assistance in cases where a model of the object is not available. With the exception of a slight blemish on p. 82, Fig. 6, in which the screw is shown, will not prevent the nut from slackening, we have nothing but commendation for this work. The author is instructor in engineering design at the Battersea Polytechnic, and his experience has enabled him to select a well-arranged course of work, very suitable for the students for whom the book is intended.

*Elementary Qualitative Analysis.* By Dr. B. Dales and Dr. O. L. Barnebey. vii+205 pp. (Chapman and Hall.) 5s. 6d. net.—If the authors of this laboratory manual set out with the intention of producing an entirely unconventional scheme of analysis they have certainly succeeded, but we fear that most students will develop brain fever or give up chemistry if they attempt to work on the lines indicated in this book. Instead of the usual method of recognising an unknown metallic radicle by a systematic treatment with a series of group precipitants, and subsequent investigation of the group precipitate obtained, the student is apparently expected to memorise the nature and appearance of all the common and uncommon compounds of all the metals which can be obtained by precipitation. It is true, as the authors point out, that this greatly extends the student's knowledge of the chemistry of the metals, but we think that the student's brain can be packed with more useful facts than those concerning the properties of bismuth ferrocyanide and mercurous bromate. The recognition of the acid radicles is based on precipitation reactions with acid and with neutral silver nitrate, a novel method of procedure, but not possessing no apparent advantage over the more usual scheme. The penultimate chapter introduces group analysis, and here one finds the first sign of regular arrangement, which the writer's experience suggests should be introduced as soon and as emphatically as possible. The system employed involves the amalgamated precipitation of Groups III. A and III. B with ammonium sulphide, thus increasing most unnecessarily the complexity of the separation processes.

*A Laboratory Course of Practical Electricity.* By M. J. Archbold. 222 pp. (New York: The Macmillan Co.) 5s. net.—This course has been prepared by the instructor in vocational electricity in the Wendell

Phillips High School, Chicago. The volume is bound in the loose-leaf arrangement, each experiment or test occupying one page; this enables the sequence of the experiments to be modified if desired. The method of leaving gaps in the type, so that the student may fill in the parts omitted, is one which does not commend itself to all teachers. As an example:—"The voltmeter has a . . . resistance, because it only allows . . . current to pass through it." Whatever the objections to this method may be, it must result in better practical work being done when the classes are large, and when the students have no experience in the important matter of recording notes. The experiments are quite good and thoroughly practical, emphasising always the vocational side of the subject. Teachers of electro-technology are recommended to use the volume, even if only as a source of original suggestions for experiments.

### Art.

*Model Drawing, Geometrical and Perspective.* By C. O. Wright and W. A. Rudd. 245 pp. (10 in. x 7 in.). (Cambridge University Press.) 6s. net.—In this book, which is illustrated by more than 300 diagrams, architectural forms are used in the development of a course of work in geometrical and perspective drawing instead of the usual formal models. The examples selected are of an interesting character, and, on the whole, are well chosen to illustrate the principles which are dealt with. The treatment of geometrical drawing is satisfactory, but in the examples of pattern design the constructions are vague and inadequate. The arrangement and development of the course are novel; it should prove interesting and an incentive to original work.

## EDUCATIONAL BOOKS PUBLISHED DURING JANUARY, 1917.

(Compiled from information provided by the publishers.)

### Modern Languages.

Théodore de Banville : "Gringoire; Comédie en un Acte en Prose." Edited by A. Wilson-Green. (Cambridge Modern French Series.) xvi+84 pp. (Cambridge University Press.) 3s. net.

"A Middle High German Primer." By J. Wright. Third edition, rewritten and enlarged. 213 pp. (Clarendon Press.) 4s. 6d. net.

"Le Château de la Misère." By H. A. Gérard. (Harrap.) 1s. net.

"Siepmann's French Series for Rapid Readings":—  
(14) Souvestre : "Un Secret de Médecin." (Adapted.)  
(15) Souvestre : "Le Parchemin du Docteur Maure." (Adapted.) (16) Dumas : "Le Vaillant Petit Tailleur." (Adapted.) (17) Dumas : "La Reine des Neiges." (Adapted.) (18) Soulié : "Le Tour de France." (Adapted.) (19) Mérimée : "Les Mécontents." (Adapted.) (Macmillan.) Paper covers, 6d. each; cloth, 7d. each.

"Practical Spanish Grammar." By V. Fuentes and V. E. François. xvi+314 pp. (Macmillan.) 4s. 6d. net.

"Spanish Verbs." By G. R. Macdonald. 165 pp. (Pitman.) 2s. 6d. net.

### Classics.

"First Rules for Latin Prose, with Hints and Examples." By T. C. Weatherhead. Folded card. (Cambridge University Press.) 8d. net.

"Biennium Latinum: a Translation and Composition Book for Beginners." By T. C. Weatherhead. viii+146 pp. (Cambridge University Press.) 2s. 6d. net.

**English: Grammar, Composition, Literature.**

"*Cymbeline*." Edited by J. H. Lobban. (The Granta Shakespeare.) xxx+218 pp. (Cambridge University Press.) 1s. net.

"An English Pronouncing Dictionary (on strictly Phonetic Principles)." By Daniel Jones. xxviii+420 pp. (Dent.) 6s. net.

"A First Course of English Phonetics." By Harold E. Palmer. 89 pp. (Heffer.) 2s. 6d. net.

"English Literature for Secondary Schools":— "Njal and Gunnar." Retold for boys by H. Malim. xii+124 pp. "Selections from Malory's 'Morte d'Arthur.'" Edited by Dorothy M. Macardle. xii+118 pp. (Macmillan.) 1s. each.

**Mathematics.**

"Algebra: Theoretical and Practical, including Trigonometry and an Introduction to the Calculus." By A. H. Bell. (A class-book for secondary and technical schools.) 354 pp. (Blackie.) 4s. 6d.

"Elementary Dynamics of the Particle and Rigid Body." By R. J. A. Barnard. viii+374 pp. (Macmillan.) 6s.

"Functions of a Complex Variable." By Thomas M. MacRobert. xiv+298 pp. (Macmillan.) 12s. net.

**Science and Technology.**

"Elementary Physics for Engineers: An Elementary Text-book for First Year Students taking an Engineering Course in a Technical Institution." By J. Paley Yorke. (Cambridge Technical Series.) viii+166 pp. (Cambridge University Press.) 4s. net.

"Nature Study Lessons, Seasonally Arranged." By J. B. Philip. (Cambridge Nature Study Series.) xii+148 pp. (Cambridge University Press.) 2s. 6d. net.

"Laboratory Manual of General Chemistry." By A. B. Lamb. 172 pp. (Harvard University Press; London: Humphrey Milford.) 6s. net.

"Laboratory Course of Practical Electricity for Vocational Schools." By Maurice J. Archbold. (Macmillan.) 5s. net.

"Theoretical Chemistry." By Prof. W. Nernst. Revised in accordance with the seventh German edition by H. T. Tizard. xx+854 pp. (Macmillan.) 15s. net.

**Pedagogy.**

"How We Learn: a Short Primer of Scientific Method for Boys." By W. H. S. Jones. viii+64 pp. (Cambridge University Press.) 1s. 6d. net.

"The Principles and Practice of Continuation Teaching." By C. H. Kirton. 376 pp. (Pitman.) 5s. net.

**Miscellaneous.**

"The Books of Ezra and Nehemiah." Edited by T. W. Crafer. (Revised version for schools.) xxx+138 pp. (Cambridge University Press.) 1s. 6d. net.

"Oxford University Handbook, 1917." 394 pp. (Clarendon Press.) 2s. 6d. net.

"Sea Power: For the Use of Schools." By Archibald Hurd. 96 pp. (Constable.) 1s. net.

"Be a Man." By H. Bucknall. 160 pp. (Harrap.) 2s. 6d. net.

"Introduction to Economics." By Frank O'Hara. viii+260 pp. (Macmillan.) 4s. 6d. net.

"The Boy's Book of Business." By Cecil Chisholm and Dudley W. Walton. 184 pp. (Pitman.) 1s. 6d. net.

"The Return of Sherlock Holmes." Vol. ii. (In Pitman's Shorthand.) By Sir Arthur Conan Doyle. 130 pp. (Pitman.) 1s. 6d.

"Graduated Commercial Letters for Dictation." 64 pp. (Pitman.) 8d.

**CORRESPONDENCE.**

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising an article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

**The Need for Boarding-schools.**

In comparing day-schools with boarding-schools the January issue of THE SCHOOL WORLD, Dr. King has dismissed the claims of a boarding-school prop in some respects too lightly. He has held the balance skilfully between the different types of school, and concluded by suggesting that each serves to meet a different want. The need for economy in these times, and the prospect of a future little less straitened, must make an increasing proportion of the class which have formerly sent their sons to board at public schools as a matter of course look askance at the cost of what may seem a luxury. At the same time, the improvement of secondary day-schools makes them a tempting bait. Not only then will the mental training offered by public schools be set upon its trial, but a new awakened interest in educational reform may ask for their credentials in claiming to train character.

Though not often found expressed, the article faith most strongly held by the champions of the boarding-schools is that they offer a free field for development of individual character. Mr. Curtis' report, quoted by Dr. King, that the Germans charge of prisoners found the English the most difficult to manage because of their baffling variety of character, our invariable success with native and frontier work in general, and our astonishment at recovery from the unpreparedness in which this was done, do strongly reinforce our claim to resources. We believe, then, there is little need to fear the charge of characterless uniformity commonly preferred against the public-school product.

Our schools do produce character, but is it method satisfactory? The public-school man at his best excels because the lack of systematic supervision puts up him as a boy the business of fighting evils in his own strength. This is a desperate position, the more that what theory there is to the old house system is against it. It has always been claimed that the virtue in a house-master lay in his careful supervision of the boys in his charge. Beyond that he has no more *raison d'être* than any boarding-house keeper. If he fulfills his function he does not less than the so-called reformed school claims; if he does not, he then collapses.

Scarcely a thoughtful man who has passed through a public school would fail to admit that in the great majority of houses more evils are missed than are detected, or, at any rate, seriously combated. Then the supervision theory fails, and we are left to champion the public-school cause on the lines Dr. King prefers, that knowledge of good and evil be won at some risk rather than innocence kept with ignorance. This, I am convinced, is the true strength of our old schools, but is their method sound? It is high time to consider whether the excellence of a comparative few is not at far too great a cost.

This question of the "free field" goes to the very roots of the matter. Fundamentally, it amounts to claiming that here alone in all our Western civilisations is to be found almost full scope for the ruthless process of natural selection. These small artificial communities, screened from the humbler influences

cator society, produce men of character who have learnt the control of others often through trials whose treachery is little known outside. I know of a school where a junior monitor in one of the houses resolved to report a flagrant instance of a prevalent vice in another senior to him. The decision in the matter hung for a day or two, and the school was divided into two camps, the majority so strongly resenting the "treacherous revelation" of a mischief they all knew to be frankly accepted that the boy could not appear in public. I understand the matter ended in the expulsion of the offender, and the authorities *expressed satisfaction that the school was clean again*. The courage was magnificent and by no means unique; but look on the other side of the picture: what a staggering price was paid for it in the frankly given acquiescence of so large a proportion of the school in the vice he exposed! The material for such a conflagration is common, as most candid public-spirited men would admit. The price of worldly wisdom is heavy enough in the grown world. Are we wise to let it heavier still in the training of our children? There is, however, a more serious scientific objection to the "free field" theory. Tacitly, the analogy is with animal life—the strong and fit survive, the weak are negligible. But, to be true, the comparison must be made with the young of the animal world, and there we find a striking and fundamental difference, for the training of the cub is jealously watched and instinctively graded to its strength by the parent. Our method is the very contrary; the boy is taken in the middle of his development—indeed, by a vicious irony at the very age (twelve to fourteen) when he is physically most unstable—and pitted against more mature and often unscrupulous associates. So obviously deplorable is such a position that, of course, what theory of our public-school training has been hastily constructed to meet the urgent need of attack emphatically puts the principle of supervision by house-masters. I quote this common theory is in practice, except perhaps, to correct extreme cases of vice or dissipation.

The charges are substantial—and those must be made by themselves whose concern for our great schools pressures them to face facts, however disagreeable it is imperative to seek reform. This must be done more difficult than any mere modernising of curriculum, and if some are seeking it upon revolutionary lines we must suspend our conservative distaste and frankly examine the achievements of such "adventurers."

It is from the charge, often absolutely unfounded, that theirs are merely money-making concerns, there is growing in the minds of the old school that their work is tainted by a particular attention to each child which seems to be a certain type of parent, but which is also due to coddling. "With all its misfortune," they say, "let us keep at any cost the hardness of school and shun these effeminacies." But if we compare their present hardness with that of Mr. Arnold's time, the softening is no less marked here than in society generally. The truth seems to be that our education is for ever doomed to stand at a respectful distance and reluctantly the changes in social life. The reverse should surely be the case. Whatever national reform is needed should originate in our schools, not only because they offer fine opportunities for the practical expression of the ideals of chosen men ruling them, but chiefly, of course, because they have the making of the next generation.

If the nation needs hardening let us not passively let it will come by the accidental, unscientific, and

costly methods in vogue now, but rather set ourselves purposefully to construct a school life which shall achieve the spiritual hardness we want. That will, I am convinced, be best obtained in boarding-schools, and these must be allowed forms as varied as the aims and characters of their principals, within, of course, such limits as a reasonable national control of education will allow. If the prominence which is beginning to be asked for character-training is as imperative as many strongly feel, then it does seem that, in addition to keeping the boarding-school, a bold and vigorous effort will have to be made to find suitable men for such work. It is well known that no academic distinction is a guarantee of a man's ability to teach and train the young; are we, then, doomed to lag for ever behind all other modern enterprise, and still choose our staff upon illogical principles? It will be urged that the higher offices in the profession are recruited upon the test of success in school work very largely. This may be true, but it does not meet the far more serious charge that, almost of all professions in the country, this, the most essential to a nation's welfare, is the most casually and unscientifically recruited in the first instance.

There is still, then, a need for boarding-school life, as great as the growing concern for the systematic training of our young. But the old "free field" theory must go, and the schoolboy's life be more intimately controlled, yet so that we turn neither to the "cloistered education" of Lanfranc with its system of hostile surveillance, nor to the effeminacy of the nursery type.

V. W. RICHARDS.

#### On Handwork and School.

It is a great and prevalent fallacy that handwork in school is only of use to the future carpenter or cabinet-maker; for this leaves out the all-important fact that the function of handwork is to train mind quite as much as muscle.

In the early days of life the child is not able to perform any concrete task accurately. There is a very great waste of energy; notice the contorted attitude, the hanging tongue, the feet twisted around the chair-leg, of the child's first efforts at writing. And it is—or should be—largely the aim of all early training to impart skill and to increase control; and skill is a matter involving the constant correlation of the data of sense (these are, in the last resort, mental factors) and the nice co-ordination of muscular movements. No amount of telling "how" will enable this skill to be gained; it can only be acquired by long and arduous "doing." Gradually the extraneous movements are eliminated, and there remains the delicate and graceful performance, with its minimum of waste of effort.

Prof. Lloyd Morgan tells us that, whenever he comes upon a student who displays unusual delicacy in dissection, he inquires how he or she has trained the finger muscles to so high a degree of executive ability. Often he is told that there has been no special training; but, on further probing, he elicits the reply: "Well, I've always been given to carving boats, and the knobs of sticks and odd things, but I never learnt to do so." And, furthermore, he quotes the reply of a dentist who was asked how he maintained such a delicate touch: "Chiefly by practising scales on the piano."

This impresses a great lesson. Training in co-ordination is not a matter for the future artisan alone, but a matter for all. The eminent astronomer or physician, for example, is very largely dependent upon delicate control of micrometer screw or lens; and the nicety of the surgeon's craft is proverbial. There is

little need, too, to emphasise the importance of precise and skilful adjustment of motor activities to the painter or musician or sculptor. And, to leave the high realms of art and science, there is still the skill required in such valuable domestic occupations as nursing and needlework.

The body is a machine of wondrous mechanism, and we do not attain to the full stature of our possibilities until we make that machine to work as effectively and as efficiently as it is able; and that can only be when we have attained complete co-ordination of muscles and mind.

Our schools, in this direction, are largely suppressive. The child, eager to exercise his muscles and with a natural desire to move, is curbed and confined. He is made to sit still and be pumped into—and the inevitable results are a lack of interest, a loss of initiative and imaginative power, and a merely passive and superficial reception of the presented facts. The Spirit of Childhood is for play and art and movement; if it be doubted, watch children dramatising an historical scene, or solving an interesting, because practical, problem in the science room, or making some working model; and opposed to it is the Spirit of Pedantry, dry and dusty and concerned only with the putting in of certain little packages of "fact," duly weighed and numbered. At the basis of all true learning, of all true building-up of a worthy self, of all true appreciation of knowledge as an instrument, rest interest and imagination and love. But, despite all these things, the average child of to-day gets no manual training or handwork in the ordinarily accepted sense from the time he leaves the "occupations" of the infant school at seven to the time he enters the woodwork shop at twelve! Five precious years are thus lost, and all that while the difficulty of obtaining efficient co-ordinations is gradually increasing; for neglect to use leads almost inevitably to inability to use. Happy is the boy who, because of the light within him, plays games or cultivates hobbies during those years! He will develop despite the school.

Let us, then, realise that handwork is a training of mind and body alike, and is essential for all, whatever be their prospective future careers. On every side there is a state of unrest with regard to our educational methods. May it be that in the coming reformation the spirit of pedantry no longer obstructs progress, but that the newer ways and the more enlightened methods receive their due reward.

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#### Higher Salaries for Teachers.

In his address to the Association for the Reform of Latin Teaching, published in the February issue of THE SCHOOL WORLD, Dr. Rouse makes the statement (p. 53) that "no one remembers that the one essential thing is to get good teachers, and that to get them in any number is impossible unless they are well paid." After reading the number of your magazine in which this sentence occurs, I came to the conclusion that Dr. Rouse is needlessly pessimistic and that he seems not to have taken pains to acquaint himself with the efforts other educationists are making to bring home to the responsible authorities the urgent need for higher salaries for teachers.

In reading the very issue in which Dr. Rouse's assertion occurs, I marked six passages in which your contributors emphasised "the one essential thing." Prof. Gilbert Murray (p. 43) remarks:—"In the first place, salaries should be higher. If only some of the money spent on dead bricks and mortar had

been spent on live teachers' salaries!" Mr. W. L. Hichens (p. 47) says:—"For one thing, assistant masters are abominably paid. Their average pay is I believe, less than that of our workmen, and considerably less than that of our skilled mechanics." Mr. A. C. Benson (p. 59) says:—"We do not believe sufficiently in education to pay our teachers properly or to make it a career for the best men." Mr. A. L. Smith, the Master of Balliol (p. 60), is reported to have said:—"After the war we shall be much more ready to recognise the latent qualities and the real heroism of the teacher, even in an elementary school, and be willing to grant better terms. The sum doled out for education have never been a fraction of what they would have been if we had been real in earnest." Mr. A. A. Somerville (p. 62):—"Secondary-school teachers, badly paid before the war, are now in much worse case." Speaking to headmaster the Rev. J. R. Wynne-Edwards (p. 62) said:—"It is absolutely essential that a solution of this difficulty increasing the supply of science teachers should be found. The men must be paid adequately." Your correspondent, "A. T. S.," remarks:—"To be sure that children are doing suitable things which will lead to learning postulates a good reasonably trained teacher; and to get and keep such a teacher means the payment to him of a reasonable salary."

In addition, you print on p. 63 a resolution on the same subject passed by the Association of Assistant Masters.

It may be hoped that Dr. Rouse will persevere in his endeavours to raise the status of the teaching profession, but evidently he need not now think himself as a "voice crying in the wilderness."

SCRUTATOR.

I MEANT to refer to the public, and in particular the Government and public men. Those engaged in teaching have been proclaiming the truth for years without any effect that I can see. The local authorities are both mean and hostile, as I indicated. But there is one point which is scarcely ever realised, a point never made by speakers and writers: it is the personality of the teacher that matters most, and the conditions are such that a supply of good men cannot be expected any longer.

W. H. D. ROUSE.

## The School World.

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# The School World

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SIXPENCE.

## ACCENTS AND GENDERS IN FRENCH.

By Prof. WALTER RIPPmann, M.A.

Defects which were generally noticeable in the papers on French grammar were the misuse of accents and ignorance of the genders of many words of everyday life."—[From the examiners' reports on a recent Junior Local examination.]

WE often read this kind of remark, and there is no reason why it should surprise us. For accents and genders in French are a real difficulty—and they were a difficulty long before the "direct method" was heard of; which is fortunate, because it enables us to discuss the difficulty without raising the old *v. new method*" issue.

That the learner should make mistakes over accents and genders is due to various reasons. This is in part due to the non-rational conventions of the language; in part to faulty teaching; and, of course, not infrequently to mere carelessness. This last cause we need not consider, for the child that is careless in this respect is careless generally, and requires appropriate treatment for this weakness in his work as a whole.

The story of the French accents is a rather pathetic one. There was much well-meant endeavour to improve the spelling in the sixteenth century; Brunot gives an interesting account of it in his chapter on "Essais de simplification et d'unification de l'orthographe" in the second volume of his "Histoire de la langue française." The need for accents had made itself felt in the case of the letter *e*, which had to do duty for close *e*, open *e*, and mute *e*—another instance of trouble arising from the inadequate number of letters representing vowel sounds in the Latin alphabet, which is now at the bottom of most of our troubles in English spelling. Now diacritics (accents, etc., over a letter) are a nuisance from every point of view; but they may be accepted

as a permissible device if they are used consistently—that is, to take our present instance, if every close *e* is written *é*, every open *e* *è*, leaving *e* without a diacritic to stand for "mute *e*." Unfortunately this consistency is not attained in French. It is true that *é* almost always represents a close *e* (it does not do so, e.g., in *parlé-je*, *je céderai*, *événément*); but many close *e*'s have no accent (e.g. *pied*, *porter*, *assez*, *revolver*), and some are written *ai*. Again, *è* represents open *e*; but many open *e*'s have no accent (e.g. *mer*, *terre*, *projet*). Particularly awkward are the two ways of indicating open *e* adopted in certain verbs (e.g. *jette*, *achète*) and adjectives (*muette*, *discrete*). Further, in some cases (e.g. *chêne*, *être*) another accent is used for the same purpose; and open *e* is also written *ai*. We thus have three ways of spelling the *e* that is close and four of spelling the one that is open.

Accents, however, have been added not only to indicate the phonetic value of a letter, but to differentiate two meanings of the same word, or to show that a letter has been lost. In neither case is there any consistency; and even if there were, it would be a futile proceeding. The former use is exemplified by *a* and *à*, *du* and *dû*, *sur* and *sûr*; there is no such distinction in (*ne*) *pas* and *pas* ("step"), or in *suis* ("am") and *suis* ("follow"). In the spoken language there is no difference in sound, yet the words give no trouble, because the context makes clear which meaning the word has; and there can similarly be no doubt as to the meaning in the written language. These accents are entirely superfluous, a useless complication of the spelling. Nothing more favourable can be said for the circumflex accent, which is, indeed, altogether valueless. It is not needed to indicate open *e*, for the grave accent serves that purpose; and its other use, viz. to show that a letter has disappeared, is simply silly; for if this were desirable, it should be done

consistently, in which case every word almost would have one or more circumflex accents.

It follows that the use of accents in French is extremely unsatisfactory. The pronunciation affords guidance only to a very limited degree. It does so to some extent, and the learner who, for instance, pronounces a more or less close *e* in *religion* may be misled by this and spell the word *réligion*. Generally speaking, it is not a matter of rational connection between the spoken and the written language, but of mere memorising of the conventional written form; and as in the case of English spelling, the child with a good visual memory scores. The learning off of rules avails little, the essential thing is repetition; and this implies due attention to written work in our teaching. Careful correction of all written exercises by the pupil, under the guidance of the teacher, with the repeated writing out of the correct form of a word, will do much to effect an improvement. Dictation is also useful; and in this connection I may refer to "silent dictation"—that is, transcribing a phonetic text into the conventional spelling, such as I recommended in my "Early Teaching of French," and introduced in the Phonetic Section of my "First Steps." I do not claim any originality for this idea; but it may be as well to state that these books were issued in the spring of 1915, because another book utilising the same idea appeared in the autumn of 1915, and the publishers of it have inadvertently implied in a letter to *Modern Language Teaching* that the idea of passages for "silent dictation" in my "Further Steps" (issued this spring) was borrowed from their book.

There is no golden rule for writing the French accents correctly, and the same is true of the genders in French.

The story of French gender is again a sad one; it is so in most languages. That the gender of words designating males and females should be masculine and feminine respectively may be accepted as reasonable; and if whatever has no sex has a third gender (neuter), we have a good working arrangement. This we find in English, with scarcely an exception. Or, again, if the ending consistently shows the gender, we have indeed no rational, but at any rate a grammatical, indication of value. This, with some exceptions, we find in Russian. But in French the conditions are terrible. Even words designating males and females are not always masculine (e.g. *une recrue*, *une sentinelle*) or feminine (e.g. *un souillon*) respectively; and there is no neuter gender, so that every sexless noun has to be treated as though it represented a male or female. The endings, too, give no infallible help: *réverbère* is mas-

cule, *misère* is feminine; *drapeau* is masc., *peau* is fem.; *silence* is masc., *présence* is fem., *crayon* is masc., *chanson* is fem. Once more we are driven to the conclusion that repetition alone will ensure accurate knowledge.

I know that some grammars give quite a number of rules for determining the gender from the meaning or the form of French words; but so long as the pupil has to think of a rule before he writes or speaks a word with the correct gender he cannot be said to possess a real working knowledge. The correct gender must be used instinctively. To bring this about, we must insist on a close association of the article and the noun. From the beginning, when the learner is asked for a noun, he should be given to understand that he must give the article too. When he is asked for the noun connected with *finir* he should answer *la fin* not merely *fin*. When a word begins with a vowel or mute *h*, the definite article does not help us; then the indefinite article is wanted. When, therefore, he is asked for the noun connected with *exercer* he must answer *un exercice*, not merely *exercice*.<sup>1</sup> This is the best general principle for ensuring a knowledge of genders, and experience will show the teacher which words are particularly likely to give his pupils trouble. I will not insist on those abominations, the words with two genders such as *le* and *la crêpe*, *pendule*, *foudre*, *voile* or the altogether ridiculous *gens* and *orge*. I am thinking rather of those which suggest the wrong gender owing to their form. Many of these end in a mute *e*, and as the majority of words in mute *e* are feminine, there is a natural temptation to make the minority feminine too. To this class belong the following which my pupils have often made feminine: *abîme*, *âge*, *arbre*, *caractère*, *dialecte*, *estime*, *exercice*, *génie*, *geste*, *groupe*, *incendie*, *lustre*, *luxe*, *manque*, *nombre*, *pouce*, *rythme*, *silence*, *squelette*, *thème*, *triomphe*, *zèle*. Other masculine words which often appear to suggest the feminine gender are: *art*, *choix*, *salut*, *sor*. It seems to be less usual for feminine words to suggest the masculine gender; I have noted as common: *armoire*, *cage*, *cendre*, *dent*, *écrtoire*, *fin*, *fois*, *image*, *leçon*, *mœurs*, *page*, *paroi*, *rage*. In the case of the words in *-ag* the reason is obvious, and the words in *-oit* have no doubt been influenced by those in *-oit*; in other cases the source of the confusion is less easy to trace.

The gender of some of these words may be impressed on the pupils by reminding them e.g., of *le moyen âge*, *les Beaux-Arts*; but

<sup>1</sup> It seems scarcely necessary to add that the pupil must pronounce *la*, *un* and *une* quite distinctly. I have occasionally heard them pronounced in such a way that the masculine and feminine forms sounded identical; in that case the prefixing of the article will not help to secure a knowledge of the genders.

as a rule there is nothing but painstaking correction and persistent repetition that will achieve the desired result.

I have spoken above disparagingly of rules for the genders; but I do not wish to be misunderstood. You cannot go by rule alone, and the learning of rules is not of much value; but there are certain groups of words with the same ending which are associated with one gender only, with no exceptions, or only a few. Certain conclusions as to gender are bound to be made when proper attention is paid to word formation. This has, I believe, been often neglected; and I fear I must refer to one of my own books for a systematic treatment of the subject. In the "Further Steps" (pp. 119 to 130) I have arranged all the words occurring in the "First Steps" and the "Further Steps" according to their formation. Such a grouping of words can profitably be carried out by the pupil, and he may be led to certain rules or have the need of care impressed on him thereby. Thus he comes to realise that any word ending in *-ier* or *-il* will presumably be masculine, and a word in *-tion* or *-ture* presumably feminine; he notices that as against many words in *-in* that are masculine, only the word *fin* is feminine, and that while words in *-ence* are generally feminine, the one word *silence* stands by itself as a masculine word. Such systematic consideration of word formation strengthens the feeling that a word with a certain ending is likely to be of a certain gender; and it serves to impress deviations on the learner's mind.

All this undoubtedly helps; but far and away the most important thing is to acquire the article habit. In order to impress it still more, I conclude by quoting from M. Berthon's excellent "Première Grammaire Française": "Il n'y a qu'une seule règle infaillible pour apprendre les genres. La voici: N'apprenez jamais un mot nouveau sans le faire précéder d'un article."

## THE CARE OF THE EYES OF SCHOOL CHILDREN.

By N. BISHOP HARMAN, M.A., M.B. Cantab., F.R.C.S. Eng.  
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### II.

#### EYE-STRAIN AND ITS CAUSES.

EYE-STRAIN is a common word nowadays. The term is used to explain many headaches, worried expressions of face, and even the premature appearance of wrinkles. And it is responsible for all these things in some persons. Children suffer from it, mainly because Nature did not mean them to be cooped up all day in a school or any building, how-

ever perfect that may be. Children were meant to run about, eat, sleep, and grow. But the inexorable laws of the big machine of civilisation have ordered it otherwise. We must therefore be prepared to check the ill-effects of this unnatural régime.

*How does a child show eye-strain?* It cannot tell us of its feelings. It may cry, like the child of the hostess of the prophet—"My head! my head!" But a headache may be due to many causes, even to sunstroke as in the child.

Some of the common signs of eye-strain are to be read in the face of the child. A worried or strained look, a perpetual frown, constant blinking, a tendency for the eyes to water easily, all these are common signs of eye-strain. Some children begin twitchings of the face; this is particularly true of nervous children. Rubbing the eyes after lessons, especially after reading or sewing, indicates that the eyes are tired, and it may be that too much strain has been put upon them.

The perfect eye will get tired. Few people seem to realise this fact. They know their legs will get tired; when they essay to climb a hill they are accustomed to take rests, even as Christian in the arbour; but to their eyes they give no rest, they read for hours on end, and next morning awake with drowsy and tired eyes, and blame their eyes instead of their uncontrolled greed of reading. The child's eyes get tired more easily than those of the adult, for its little body is not full grown and its eyes share in the immaturity.

So far we have assumed that the eyes are perfect eyes; their shape, and therefore their focus, are all that could be wished. But not all eyes are perfect. Truth to tell, the majority are not perfect; small defects of focus are very common, and many eyes have serious defects. When the focus of the eyes is not perfect, or nearly so, the eyes work at a disadvantage. The ordinary use of the healthy eye causes the expenditure of a large amount of nervous and muscular energy. We are unconscious of the effort, but the effort is made nevertheless. When we perform near work the effort is multiplied greatly; nay, it increases in a geometrical progression the nearer the work to be done is to the eyes. If there be a defect of the focus of the eyes the extra effort necessary to overcome this defect has to be added to the natural work of the eyes. And if that extra effort be much, such as when the defect is of a sort that it is difficult to work the two eyes together, then there is very likely to be an early limitation in power to meet the effort necessary to maintain good vision, and all the signs of eye-strain appear.

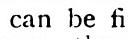
Again, there are things that we do easily when we are fit and well; those same deeds

are difficult, if not impossible, when we are "seedy" or out of training. It is so with the eyes. The healthy child does not easily get eye-strain if the focus of the eyes is good. But after an attack of fever, measles, whooping-cough, or the like, its nervous energy is reduced by the poisons generated by the fever, which for days after its decline are floating in its blood-vessels, and the ordinary effort of reading is too great for the child. So much the more early will failure set in if the eyes be not perfect. And this is why so many defects of the eyes—squint, short-sight, and other serious conditions—are reported to have their beginnings with an attack of illness.

*How can we prevent eye-strain?* We must make the burden fit the child. We should not expect a young child to carry heavy burdens, nor should we expect his eyes to do heavy tasks. Let the work be easy and the time of the doing of it short. No books, paper, or sewing needles should be allowed for infants under five years of age. They may be taught the essentials of all these, in reading, writing, and sewing, but with large materials only. Wall screens are better than books; blackboards and chalk better than paper; bone needles, wool, and canvas better than sewing needles, cotton, and calico. The larger the object the more impressive is it to the mind of the child; therefore let the letters, the pictures, the models, and the stitches be big. They cannot be too big. Next, let the hours be short. Several short lessons with intervals means less fatigue than one long lesson right on end. Think of the heart of a man—it beats up to sixty, seventy, even eighty years, does hard work all day and night, and may never give a moment's anxiety. From the moment it begins its first feeble beat in the womb of the mother until the day of the death of the man it beats right on. And it is able to do this just because it gets a rest after each beat. Shorten this brief interval of rest, and the best of hearts will collapse and the whole man die of the failure. Follow the lesson of the heart. Make the lessons short. Several short lessons with brief intervals of play will carry the child through a whole day's school untroubled in mind or body.

Lastly, we must consider the children with defective eyes. What are these defects, and how are we to find them out? In these days it is not sufficient to wait and see which of the children show signs of trouble and then attempt to discover the cause of the trouble and remedy it. Experience has shown that this plan is uneconomical. It is better and cheaper to examine the eyes of the children with the view of discovering whether or not they conform to an average standard of capability.

The doctor is now sent to every school, and he tests the eyes of the child, or, rather, he tests the vision of the child. Each eye of the child is examined in turn and the results of the test are noted. Those children who fail to pass the test are sent to an eye expert to have the eyes examined in the appropriate manner.

It may be asked: How can we test the vision of a very young child? Testing the vision is more than a test of the eye. It is also a test of intelligence and knowledge. The ordinary test-card has a series of letters of different sizes printed thereon. To pass this test the child must know the letters. Most children know their letters at about four years of age, but even then the test remains a test of intelligence, for the recognition of the letters means brain work to the child. If, therefore, we wish to test the eyes of young children, it is better to use some simple conventional sign, say the letter E, which can be fixed on the card in a number of ways, thus:  All that is required of the child in such a test is to place its little fingers in the position of the "fingers in the picture" on the card. The stimulus of a lollipop will work wonders in the accomplishment of this test. For practical purposes it may be said that, provided there is no sign of any squint, frowning, or peering into books, it will be sufficient to test the eyes of all children at the age of seven years, for then school work begins in earnest. Then it is necessary to make sure that there is no handicap to the progress of the child in the state of its eyes.

#### EYE DEFECTS.

There are found in young children two varieties of eye defect which cause trouble and eye-strain. One is known as hypermetropia or flat eye, the other as astigmatism.

A flat eye is one that is too short from before backwards. It is not long enough to allow an accurate focus of the rays entering the eye from a distant object. The perfect eye should receive these rays exactly on the sensitive spot of the retina at the back of the eye; the flat eye does not, but has to put the focusing muscles into action to change the shape of the lens of the eye to make up for the defect. It follows that whereas the perfect eye is comparatively at rest in distant vision, the flat eye is at work all the time, both in distant and in near vision. But this is not all. Nature has provided an intimate relation between different sets of muscles: when we lift a hand to our mouth the flexors are not the only muscles that come into action; the extensors also work. If it were not so, the uncontrollable flexors might cause the hand to strike a violet

blow on the mouth. So with the eyes, the focussing muscles do not act alone; with each degree of effort of focussing there is a graded effort by all the muscles that move the eyes so as to turn the eyes inwards towards the nose, because focussing should only be necessary for objects near to us. When the eye is flat the co-ordination of focussing with the movement of the eyes has to be suppressed, and this is more difficult than natural action. In some children the effort fails and they get a squint, temporary or permanent.

The astigmatic eye is quite different from the flat eye. It is an eye that is "out of truth." Everyone has seen the steel balls used in cycle bearings. These are put to the most severe test to make sure that each ball is a true sphere. If it be the least degree out of truth it will ruin the bearings of the cycle; an ill-shaped ball frets the ball-race until it has ground a groove therein. So the eye of the man or child that is astigmatic is forever trying to get into focus, and since it cannot, the result is worry and fret, or eye-strain. The word astigmatism means, literally, "that which has no point." The point of the eye is an accurate focus; an astigmatic eye has none.

The effect of the distortion of astigmatism can be seen on the image of one's face in the side of any silver teapot—it is grotesque; or, even better, examining a print through a magnifying-glass when that glass is held obliquely and not in the same plane as the print. The effect is much more akin to the image seen by the astigmatic eye; part of the letters seem to be in focus and part not, and both cannot be got into focus together, unless, indeed, the lens be set true with the plane of the print. It may be asked: How common are these defects of the eye? In the latest Blue Books of the Board of Education there is to be found this sentence: "So far as the figures in the school medical officers' reports may be accepted as a basis of calculation, it would appear that the percentage of children with defective vision in attendance at elementary schools is approximately 30, and that in 17 per cent. of the children the extent of the defect indicates urgent need for treat-

ment." Some years ago I examined the eyes of all the children in a good-class school. Of 341 boys 52 per cent. had good vision and 18 per cent. failed. Of 328 girls 74 per cent. had good vision and 26 per cent. failed. The year before the war I examined all the case-papers of the patients at my children's hospital. One thousand six hundred and seventy children were seen on account of bad eyes; 1,348 had eyes with bad focus, so that they could not see

properly. The kinds of error of focus found in the eyes of these children were as follows:—

	Number.	Per cent.
Flat eye or hypermetropia ...	349	25·9
Astigmatism ... ...	655	48·7
Short-sight ... ...	167	12·4
Short-sight with astigmatism	177	13·0

Such figures as these show how very common is some failure in the development or condition of the eye, and how necessary is the assistance of the eye doctor in finding out the nature of the defect and the best means of correcting it or its effects, whether that be by the wearing of glasses or by some exception to routine education. The frequency of these errors of focus means: When in doubt of the state of a child's eyes, to err on the side of safety—an unnecessary examination is less bother than the evil of unchecked eye-strain. Especially is this true of a weakly child or one recently ill. In this connection, let me beg fond parents and friends not to give books to convalescent children to fill up the weary hours of captivity; give the child toys, or plasticine, or paints and paper, or a knife and wood to carve and cut; anything is better than the concentrated effort of reading.

(To be concluded.)

#### POETIC APPRECIATION AND EXPRESSION: AN EXPERIMENT.

By E. M. WHITE.

AT an age when the minds of pupils could best be kindled into appreciation of poetry, the literature teaching given to them is too often apt to degenerate into preparation for examinations; with the result that the subject becomes overloaded with notes, and is presented as so much to be "got through" before a certain date. Such treatment usually kills most of the charm, and prevents any desire to travel further in the "realms of gold" from arising. As a partial revelation of the soul of humanity, literature should take a proud position among the other achievements of mankind on the long road to civilisation, and its aspect as a human legacy should be continually in the teacher's mind, so that the impression gained by the pupils becomes one that intimately connects poetry with life. Indeed, that should be the case with all subjects, since education is a preparation for life, and what is alien from life is useless as an educational factor.

But literature especially should not pass from the sphere of interest when school is over, as it unfortunately does in many cases. And to prevent this a genuine liking for beautiful language and high thoughts must be

instilled; the liking must not arise from a sense of duty, but through real pleasure in, and appreciation of, poetic expression. Such a taste can be cultivated only when the ground of the mind is prepared by a willing receptiveness on the part of pupils, and this, in its turn, is present only when no trace exists of that semi-antagonism between teacher and taught that is far too prevalent. Aloofness is not an attitude that inspires confidence or even real respect; the doctrine of original sin in the child is hard to abolish, as it so easily accounts for much that is in reality due to deficiencies in the teacher. Yet encouragement, respect, and praise from the teacher are the only keys that will unlock young hearts and minds. In no subject is a sympathetic understanding between the class and its master or mistress so essential to true success. If the pupils are not interested and do not "ask for more," what is taught is worthless, and had best be left alone; to arouse appreciation to the extent of their powers, and then to give some intelligent conception of what they appreciate, should be the aim of the literature teacher. Otherwise his work is a failure.

Young people have an instinctive preference for poetic thought and beauty in language; the class is rare where the majority of pupils cannot detect those lines in a poem which possess high merit, though at first they are unable to tell why they like the parts they choose. Thus interest soon wanes after the ejaculation of "That's pretty!" or "How nice!" unless some analysis is attempted. Analysis, however, is a second stage: the first is to arouse a liking for the reading of poetry. This is not done by allowing pupils to attack a poem or play by themselves, for they will probably miss the beauty in puzzling over the meaning. In practically every case it should be read to them first, and here the teacher's voice is of great importance. Altogether different impressions can be produced by the tone and manner in which such poems as Wordsworth's "Sonnet on Westminster Bridge" or M. Arnold's "Sohrab and Rustum" are read. I have known an unruly class subdued by the former, and a girl, rough in manner, listening with tears in her eyes to the latter, when they were read by a teacher whose voice contained cadences of sympathy.

After the teacher's reading, some pupils may attempt reading parts—and this applies to Shakespeare's plays as well as poems generally—when passing reference or questions may be given to sections of special beauty, and the class may be asked to choose parts for memorising. These lines should be wholly their own choice, and should consist only of what they like. I have invariably found that children

instinctively choose lines of beauty; they can not tell wherein the beauty lies, but they feel it. From "L'Allegro" the lines:—

Right against the eastern gate,  
Where the great sun begins his state,  
Robed in flames and amber light,  
The clouds in thousand liveries dight,

and especially

Robed in flames and amber light,  
were almost unanimously appreciated.

And the passage in M. Arnold's "The Forsaken Merman" commencing:—

Sand-strewn caverns cool and deep,  
Where the winds are all asleep,

is a favourite, though it takes some time before young people see why the first line is haunting to the mind, and gives a sense of vista. However, to find lines that give genuine pleasure when repeated and to want to learn them something for the pupil to accomplish.

Later, a certain amount of scansion can be done, but no technical terms should be introduced at first; the regularity of metre and the different effect of different kinds of lines and feet are all that it is necessary to notice at this stage.

Then may come detailed analysis<sup>1</sup> of beautiful verse, and if pupils are asked to select the words and the lines they like best, and these are arranged on the blackboard, they will soon discover that there is a preponderance of such letters as "l," "m," and "r," that alliteration often occurs, and that long vowel sounds are more pleasing than short. When these discoveries have been made a delight will be taken in detecting the characteristics in other poems. Notice must next be taken of metaphors and similes—such a poem as Shelley's "Ode to a Skylark" is a good one for purposes of illustration—and pupils can be required to introduce original metaphors and similes in descriptive paragraphs on sunset, walk in autumn, the sea, etc. And in correcting these attempts it is a better plan to praise what is good than to expose poverty; the latter must be done very carefully, for young people are extremely sensitive over their failings, and it is dangerously easy to freeze the imagination, and so prevent its expansion and expression.

That cultivation of the poetic spirit and sense of art is possible to a much greater extent than has been done cannot be doubted by any who have attempted the task. Even children who seem dull, or vulgar, or frivolous have within them a finer fibre than appears on the surface, a chord which can respond to the skilful touch.

<sup>1</sup> There are many useful suggestions in this direction in Dr. Haywood's valuable little book, "The Lesson in Appreciation."

For the whole race is not yet raised to its possible standard of sensitiveness, and youth is most easily open to training in this direction. But so much of our treatment of art, especially of literature, has the effect of blunting the delicate antennæ of the soul. Therefore, it is necessary to proceed with tact, caution, and sympathy if we desire results spiritual rather than merely intellectual.

After some lessons of the type outlined above the experiment was tried of obtaining lines of poetry from two forms which consisted of pupils who were not considered capable of taking examinations—children, indeed, regarded as the "riff-raff" of the school: girls of ages fourteen to sixteen, difficult to manage, poor at lessons, usually indifferent, and generally disliked. I suggested that they should attempt a few lines for their homework, and gave autumn, the sky or the sun, the sea at night, as subjects, two to each form.

It is better to give a *choice* of subjects, as it induces a feeling of freedom, and it is not well to insist on a particular metre. Rhyme, also, that looms so large as a factor in poetry to childish ears, can, but need not, be practically neglected at first. The great aim is to give scope to fancy, imagination, sense of beauty, and to cause the pupils to *want* to express themselves in that form when they have some glimmerings of what poetry is. A desire to tell what they see or feel, and some knowledge of the art of doing so, are the realities with which to start. I have known a teacher tell a class to copy the metre of a certain poem which they had read, and tie them to the subject of spring (in the autumn!)—the results were meagre, as both willingness and knowledge were wanting, and, in addition, there was a cramped feeling induced by the restrictions. Also, unless children realise that something more than metre—beautiful words, metaphor, imagination, and the rest—is needed to make poetry, they will but flounder in dismay.

It may be of interest to give the results of my experiment; they seemed promising enough to evoke the present article. The pupils were told to leave their lines in their rough note-books so that revision was possible before entering them for correction. I found that metre was one of the chief difficulties, and that a word or two quite inappropriate would sometimes occur; but invariably the class could see what was wrong when the lines were written them on the blackboard, and they could, with guidance, remedy the defect. In the examples given below no single word or idea was mine, and it will be acknowledged that many of the fancies are charming, while in some cases the lines form real poetry. As an

example of a first and second edition, the following will serve:—

The blood-red sun is shining bright,  
Pale pearly clouds are floating, saffron-blending,  
Towards the flaming portals of the West.  
Like some great monarch royally attended,  
Majestically he descends to his palace beyond the waves.

Having read the lines aloud, and marked the stressed syllables, it was not long before the class had declared that the last line was defective in metre, that the fourth line was good as well as the second if "saffron-blending" was changed to "saffron-blended," that "shining bright" was not quite appropriate, and that they did not like the word "blood." Their combined efforts—most of the suggestions coming from the girl who composed the lines—resulted in the following ("golden" was an after addition to produce assonance with "low," and the substitution of that word gave them much pleasure):—

The golden sun is sinking low,  
Pale pearly clouds are floating, saffron-blended,  
Towards the flaming portals of the West.  
Like some great monarch royally attended,  
Majestic he descends beyond the waves.

They did not like omitting "to his palace," but could not see how to fit in the phrase. Each girl's contribution was treated in the same way, and few required so much treatment as that already dealt with. Of course, one lesson did not suffice, and the time between was spent by most girls in polishing their verse. The next piece was given as I quote it, and was composed by a girl superior in intellect to the rest:—

The lark uprises from the dew-drenched field  
With a song to greet the morning;  
The dark night clouds, departing, yield  
To the sun's triumphant dawning.

I have found that girls who are, in general, untidy and loud in manner, and whose thoughts usually seem out of school, frequently show signs of poetic feeling; a significant fact that seems to indicate that their home influence is poor, and that if their interest is aroused capacity can be found. The following four examples are from girls of this type:—

### I.

Wand'ring through earth's endless sky  
Came clouds adorned in heaven's pride.

### II.

The early morning's dew  
Reflects the sky like eyes of blue.

### III.

The sun sets o'er the purple hills,  
Midst flakes of scarlet cloud,  
Which burn like watchfires in the sky  
Of crimson, green, and blue.

## IV.

The soft day dies in a haze of rosy light  
And her mourners in robes of purple-blue are dight.  
Hushed are the songs of birds on the wing,  
And all is as silent as a sylvan fairy ring.

The last is ambitious! And the same girl also produced the following after asking me who was Phœbus and whether the sun should be referred to as "he" or "she." (It was curious to see how many times the sun was regarded as feminine!)

Bright Phœbus has gone to his bed of light,  
And has given the world to the goddess of night;  
But the tints from his mantle still linger and play  
Midst the mists that the sun would soon frighten away.

From a girl regarded as hopelessly dull, and as incapable of writing a coherent essay, came the following—the last line has been improved by the class, and she herself suggested "entirely" instead of "completely," which appeared in the original version:—

The waves were white on the open sea,  
With blue above and blue below.  
Without a limit, without a bound,  
They run the earth entirely round;  
They play with the clouds, they mock the sky,  
Or, like some sleeping creature, sigh.

And the two following are from a girl whose attitude is usually one that desires to irritate and finds pleasure in annoying—perhaps she was the last whose inner springs were reached:—

## I.

Morning has come with its rosy light,  
Chasing away the long hours of night;  
Pearly-grey clouds float silently by,  
Tinting with gold the face of the sky.

(Of course, "gold" is not right and "face" is ugly.)

## II.

Shadows spreading o'er the world  
Close the gates of day.

The idea in the last is worthy of notice, and the next few examples are chiefly noteworthy as indications of poetic fancy:—

Night folds her cloudy mantle,  
Encircling twilight's bower,  
While sunset's flush of crimson  
Fades as a dying flower.

The night glides slowly on the earth  
As a ghostly wizard, who,  
With darkened hand, lets fall  
The silver moon and stars.

And berries in the field as rubies shine.  
Like little sentinels on guard,  
The scarlet berries shine and stand.

The many-coloured avenues  
Were whisp'ring summer their good-bye.

Night after night in western skies  
The sun in crimson glory dies.

The dove-grey clouds are gliding by,  
They roam from east to west,  
And open wide their silv'ry gates  
To set the raindrops free.

The selection given is sufficient to show what can be produced by classes below the average if judicious care is taken not to suppress, but to encourage. Naturally, some rubbish was sent in, prosaic and ugly, and also absurdities, such as "The song of the nightingale heralds the day," but the lack of mere commonplaceness was remarkable. There must have been a certain amount of plagiarism, but it was unconscious; no girl, to my knowledge, consciously copied anything, though I could detect the use of words that had lately been introduced to the girls. That however, was not blameworthy. If those form that have to work for examinations could exercise their imagination occasionally in the method their productions would probably surpass anything here quoted, and a better conception of literature would be obtained than by poring over text-books.

I would emphasise the point that neither sincerity nor freshness can be obtained by means of a few solitary lessons; there must be a background of good feeling between teacher and taught, and a belief of each in the other that can become established only by time and experience. The pupils' belief in their teacher's wisdom, the teacher's belief in the pupil's potentialities, will raise a desire in the one and an expectation in the other which are bound to produce more valuable work. On the pupils the effect of such efforts and the consequent criticisms and encouragements is to induce finer sensitiveness to beauty of expression, at less tolerance for what is slipshod or ugly.

## MANUAL TRAINING IN SECONDARY SCHOOLS FOR BOYS.

By S. POLLITT, B.Sc.

Headmaster of Southall County Secondary School

**A**MONGST the various reforms suggested as the outcome of the world conflagration that of education is by no means the least to be considered. The extensive and scientific preparedness of Germany is to be traced to her highly organised educational system. The relation of scientific training to arts, commerce, and manufactures, with the consequent fast growth in her national wealth, has at length dawned upon our statesmen. As

consequence we are now about to put our house in order, a resolution long delayed, but nevertheless very necessary if the British Empire is to profit fully by the lessons learned in this war.

The future educational policy of this country must be prepared at once; for when peace is established the motive power for the machinery of progress must be largely dependent upon the training given by the schools to the youths who will be called upon to "carry on" in the great world-movements that are to come.

From the chaos of conflicting opinions prevalent as to the advantage of either the humanitarian or utilitarian studies the one over the other, we await and hope for a reasonable solution, and a compromise which will allate to each its legitimate place in the Utopian schemes of the new age.

In this article it is my avowed purpose to avoid any partiality in favour of either of the above "sides," but rather to claim the ear of both in the plea for a more serious consideration—on its own merits—of the all-round value of manual instruction and its extension in the curriculum of our public and secondary schools for boys, as of great educational and national importance.

As an educational force alone, humanitarian in its influence, irrespective of any direct utilitarian results, its claims deserve the careful consideration of those who are to mould the systems of the future, whether as administrators or teachers.

For more than ten years it has been my privilege to experience what a valuable asset has been obtained by the introduction of this form of training in secondary schools, and the real practical value of the subject. I may therefore be excused for wondering why only a small percentage of schoolmasters has fully realised the excellent training this subject provides for boys of ten to sixteen years of age.

The explanation of this indifference is, I think, to be found in the want of sympathy or lack of knowledge of the underlying uses and methods of the subject, with the result that its introduction is not taken seriously, and has often been given merely to satisfy the requirements of the Board of Education. It has, in consequence, been relegated to a very inferior place in the curriculum, and only the bare minimum of time allotted to it in the time-table.

The great demand made by the more academic and profitable (?) subjects (those required for examination successes) has, I fear, been another cause of an apparent lack of appreciation of the subject, and its being considered somewhat of a nuisance by both staff and pupils. My experience leads me to say that

those pupils taking a four years' course in wood and metal work have matriculated at the London University in greater numbers and with better results than when this subject was left out of the time table in the last year.

The Rev. W. Temple, in his presidential address to the Educational Science Section of the British Association last September, provides me with a text, and I take the liberty of quoting his remarks. He says:—

"A general education must include, if it is to be truly general, the training of all the faculties, and this plainly covers manual work as well as mental work. Moreover, it appears to be established that manual work is for children [I would also add youths] the best means of developing brain faculty, and therefore has a direct value for the purely mental side of education. . . . One of the developments which we need is the far freer use of manual and productive work as a means of education in the strictest sense; as a means, that is, of developing human faculty, quite irrespective of the practical or commercial value of such faculty when developed."

The conservative idea that manual training is menial and below the dignity of all except those who are to be artisans and workmen is, I hope, fast dying out, and the sooner it is discarded by all types of schools the better will be the opportunities to take up this work with real educational zest.

I was deeply interested some time ago in reading Prince Kropotkin's book, "Fields, Factories, and Workshops," and particularly was I impressed with the chapter devoted to brain work and manual work. All he states in this chapter from a technical point of view is so closely akin to my own ideas from an academic point of view that I would like to apply his arguments to strengthen and extend my plea, and draw from his well of experience and knowledge a few draughts which I trust may be considered invigorating and refreshing.

Prince Kropotkin says: "We maintain that in the interests of both science and industry, as well as of society as a whole, every human being, without distinction of birth, ought to receive such an education as would enable him or her to combine a thorough knowledge of science with a thorough knowledge of handicraft.

We fully recognise the necessity of specialisation, but we maintain that specialisation must follow general education, and that general education must be given in science and handicraft alike. To the division of society into brain workers and manual workers we oppose the combination of both kinds of activities, and instead of 'technical education,' which means the maintenance of the present

division between brain work and manual work, we advocate the *éducation intégrale* or complete education, which means the disappearance of that pernicious distinction."

Pestalozzi says: "Man must not merely learn first and then do, but seek to learn by what he does," and the greatest educational reformers and writers from his time to the present day have all been convinced that "from the hand to the brain" is the true principle upon which all knowledge should be acquired. In a great measure this has been followed out in the reforms in teaching introduced in recent years.

We have long had our physical, chemical, biological, and now, recently, geographical laboratories, to carry out the principles above mentioned, but only in comparatively few schools do we find manual laboratories (I prefer this term to that of carpenter's shop or woodwork room).

The far-reaching influence that a course of practical instruction in cardboard, wood, and metals exercises in the development of brain and character is very evident to those who have witnessed the results obtained. During this instruction the youth is laying the foundation of habits of care, industry, and economy by what he does. His powers of observation and intelligence are extended and developed. The motor centres of his brain are continually brought into play, with the result that his mental alacrity and capacity are bound to be stimulated and enlarged. The use of his hands prior to this training has been largely devoted to dealing with the abstract, or with two dimensions in space as in drawing, whereas he now deals with the three dimensions, the concrete being the result obtained. His originality and inventive faculties are encouraged and stimulated, and his appetite for correlated knowledge leads him to learn of the geographical distribution on the earth's surface of those timbers with which he becomes familiar, and their growth and surroundings become the objects of his further investigation.

He plans, designs, and executes his own model engine, aeroplane, steam-yacht, dynamo, etc., and thus acquires indirectly considerable knowledge of the elements of mechanics, steam, mathematics, and electricity.

The interest which he acquires in his own handiwork engenders economy of time and the virtues of diligence and perseverance; and the pride with which he exhibits his creation to his master and his parents is the climax of his ambition, and the praise he receives is the reward of his labours.

With these laudable and commendable results obtained, it must be acknowledged that

the subject which can produce them is of no mean order.

The correlation of art, science, mathematics, mechanics, geography, and botany further emphasises the plea from the mere acquisition of knowledge point of view, besides the educating influence exhibited in so many different ways.

The extensive vista of knowledge opened up to the pupil is no chimera; it becomes a solid reality of intellectual expansion which is not always obtained by studying isolated branches, but is that which he receives by the direct linking up of a chain of exercises worked by him in the manual laboratory, and whereby he has developed all the faculties of research.

The outlines of a scheme of instruction hinted at above may therefore be given at this stage. For pupils of ten to twelve years of age a course of cardboard modelling is begun, involving exercises in measurement and drawing, making plane figures, and leading up to solid geometrical objects, artistic decoration following the finished model.

For pupils of twelve to fourteen years of age a two years' course in woodwork should follow, including drawing to scale and orthographic projection, and the use and care of the ordinary tools; the making and nature of joints and their application in constructive work, e.g. scientific apparatus, objects of general use and household ornaments.

The development of constructive ideas and the execution of them should be left to the initiative faculties of the pupils. Suggestion and guidance only should be given by the instructor.

The construction of working models in wood can begin at this stage, and the desire that they should be real working products creates a need for accuracy and care, which bring out the best qualities and character of boys.

The scientific models made should be correlated with the work the pupil is doing in the physical laboratory. Their accuracy should be tested by experiment as part of his instruction in physics. By this means complex and expensive apparatus, of which the boy understands little, is avoided, and the true underlying scientific principles are easily grasped and readily understood from his own simple creations.

I might add here that if this correlation is to be carried out to the best advantage, the science master and the manual instructor must work hand in hand, and the headmaster should show his encouraging interest in the combined ideals and efforts of both.

For boys of fourteen to sixteen years of age metal work on a carefully planned scheme can with profit now be followed. It is necessary to provide a special bench, with lathe, turning

and drilling machines, pliers, hammers, punches, files, etc., all of which can be accommodated by a little ingenuity in the existing manual laboratory.

The first exercises should begin with tin plate, zinc, aluminium, and thin brass, copper and iron coming last.

A large amount of useful mechanical, physical, and geographical apparatus, together with generally useful objects, can now be turned out. Later, repoussé and art work are introduced for the ornamentation of objects made. This is productive of most excellent and interesting results, each pupil submitting original designs for this purpose.

The scheme is given only in outline, it is of sufficient length to illustrate the nature and beneficial influence of the subject. In working through this course it has been my experience to detect many promising engineers from boys whose parents had intended them to follow professional or clerical occupations, and thus avoid "the square peg in the round hole," with great profit to the pupils and to the State. By this statement it is seen that the utilitarian influence of the training has made itself manifest more indirectly than directly.

In conclusion, I again quote Kropotkin in saying: "Be it handicraft, science, or art, the chief aim of the school is not to make a specialist from a beginner, but to teach him the elements of knowledge and the good methods of work, and, above all, to give him that general inspiration which will induce him later to put in whatever he does a sincere longing for truth, to like what is beautiful both as to form and content, to feel the necessity of being a useful unit amidst other human units, and thus to feel his heart at unison with the rest of humanity."

#### THE PLACE OF GEOGRAPHY IN EDUCATION.

By B. C. WALLIS, B.Sc., F.R.G.S.

**A**MONG the signatories to the recent manifesto in defence of the humanities occur the representatives of the Geographical Association. It may, therefore, be assumed that the official geographers intend to press the case for a humanistic study of geography upon education authorities and the general public. Commenting upon this fact, a contemporary directs attention to the antithesis between humane and physical geography and uses the monsoons as an illustration—for the student of the life and history of the peoples of India the monsoons are a fundamental fact, but the causes of the monsoons do not matter in the least.

From the point of view of the teacher of geography, however, the situation cannot be dismissed so summarily; in reference to this particular illustration, it may be suggested that the writer fails entirely to appreciate the aims and methods of the modern teacher of geography. In the first place, it is quite safe to say that no teacher attempts to teach the causes of the monsoons, for they are not sufficiently determined to be known with precision. Secondly, the monsoons are not a fundamental fact; "monsoon" is a convenient term which summarises a number of fundamental facts, and these facts are intimately associated with, for example, the division of the peoples of India into eaters of wheat, rice, millet, and ragi respectively, or the division of these same peoples into hillside tea-growers, lowland jute-producers, hill-country cotton-growers, wheat-farmers dependent upon canal irrigation, and so on. The teacher's difficulty does not lie in the causes of the monsoon, but in reference to the method of presentation of these fundamental facts. He may avoid the difficulty, in the manner this humanist writer suggests, by ignoring it, and thereby leaving his pupils with an erroneous idea of the dominant feature of Indian life; he may proceed to describe these facts in words and leave the pupils with a dull task to remember many facts in apparent isolation; or he may attempt to fit these facts into a conception of the world as an ordered whole, he may give his pupils a knowledge of the facts as part of an orderly sequence of events, he may allow them to infer the facts and then check them at the bar of recorded experience, he may enable his pupils to find out facts for themselves and equip them with power and outlook and such a conception of the world we inhabit as will prevent them from making false inferences in after-school life; in short, he may attempt to demonstrate the connected mechanism of man's life on earth by the application of scientific methods of inquiry, inference, and demonstration.

A pupil in his school career is brought face to face with geographical facts to the number, it is estimated, of more than ten thousand. How shall he be assisted to assimilate these ten thousand facts? The experience of teachers who were at work a generation or less ago demonstrated clearly that so many facts cannot be assimilated by a sheer effort of memory. Consequently, there must be some manner of arrangement, some method of presentation, some valid way of summarising the facts and reducing them to manageable compass. Now, the basic situation of a British teacher of geography rests upon an outlook over the whole world—the Empire spreads so widely that the

world becomes his unit. His duty to his pupils enforces this view, for the next generation will have to face the position that the known world has shrunk; the war, for example, suggests that Australia has become nearer to, and more important in connection with, events in Europe than ever before. Consequently, the teacher must begin, continue, and end his work with an orderly outlook over the world as a whole: he is definitely interested in the life of man in Asia because it affects the life of man elsewhere, and he must appreciate the controls under which that life is passed in one area in relation to the controls under which life in other lands is maintained.

The geographer, therefore, is entitled to consider man from four points of view: merely as man—a human animal; as a worker—a maker of things; as related to Nature—controlled by inanimate matter; as related to other men—controlled by the designs, caprices, and wants of other human beings. From three of these points of view geography trenches upon the domain of the sciences anthropology, economics, and physical science. On the other hand, from the fourth point of view, it is connected with history, not merely political, but social and economic, history. Now each of these four branches of knowledge has its definitive methods of investigation, its own outlook, and, finally, its manner of presentation of its own aspect of truth. It may be admitted that the wise teacher will make use of the "scientific" method of inquiry which is common to all methods of ascertaining truth, so that the conflict between scientific and humane geographers resolves itself into a debate about outlook and manner of presentation, about the aspects of truth which should be emphasised and those which should be comparatively ignored. In all these discussions the final settlement must rest with the individual teacher; in the end the situation solves itself in the classroom; the teacher will teach geography as he comprehends it and as his bias of mind influences his outlook on the world. The perfect teacher will strive, probably, to preserve a due balance between the many aspects of that extraordinarily complex conception which we call the world; he will bear in mind the fact that what he aims at is the stimulation of the youthful mind to attain power to grasp the main features of the world as they present themselves to him. Consequently, the claim of the humanists cannot mean that geography is merely a humanistic study, for it is more than that, but that the teacher of geography whose teaching has a humanistic bias should be preferred. Probably, when the situation is so stated, the difficulty and differences of opinion cease to be

relevant, for it is obviously absurd that all teachers of geography should emphasise one department of geographical knowledge no matter what the type of school wherein they teach a more or less precise type of pupil who tends within certain wide limits to range out into a definite kind of life.

Luckily, however, in many schools there are teachers of geography who are also geographers, who fail to regard their duty as completely accomplished unless they demonstrate some of the methods and results which are entirely geographical, since they aim at the demonstration and presentation of those geographic controls which affect men's actions because men live upon a material world. When such a teacher essays to give his pupils access to these elements of geographical knowledge he is a scientific geographer, because he uses the methods and the nomenclature of the science of geography which is rapidly establishing itself in men's minds in place of the general knowledge about the world which was aforetime a mere effort of memory.

This work may be illustrated with reference to what is probably the most important control exerted by external Nature upon man's life on earth; a control which has been summarised with telling effect by the phrase, the "winter gulf of warmth," in which Britain lies. To the majority of people this phrase has little or no meaning; it requires experience and training in geographical thinking before it can be appreciated. It is essentially of the nature of those elusive truths which depend upon the mental contrast between what is and what might be. It is, therefore, a creation of the mind and of little practical utility. In so far as the teacher demonstrates what is the situation, when he directs his pupils to a grasp of the winter conditions of the north-east Atlantic Ocean and their relation to the life of man, when he uses the knowledge so acquired to explain something of the difference between man in Norway and man in Greenland or Labrador, when he points out the winter warmth as a balance of the extreme winter cold of parts of Siberia, then the teacher uses scientific methods and is a scientific geographer. But, on the other hand, when he turns to the consideration of what might be and demonstrates that this winter warmth is ultimately responsible for the Vikings, for the growth of Britain, for the progress of western and north-western Europe, and that the conflict between the Mediterranean peoples and the seafaring nations of the North would never have arisen but for the effects of this winter warmth—when, in short, he shows that without it there would probably have been no Crusades, no spacious days of Queen Eliza-

beth, no Anglo-Saxon domination of North America, then he is a humanist sketching in on a large scale the elements of the set scene of the stage on which the human race has achieved its present measure of civilisation upon the earth.

When pure geography gives outlook, grasp, and vision on so stupendous a scale, who can quibble about whether the teacher is scientific or humanist, so long as he is first and foremost a geographer?

### THE PLACE OF TEXT-BOOKS IN SCIENCE TEACHING.<sup>1</sup>

By G. N. PINGRIFF, B.A., B.Sc.

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THE most important proposition which I wish to put forward is to the effect that for the *ordinary* text-book there should be no place at all in the science teaching of, at any rate, the lower and middle forms of our schools. This, of course, is a proposition the theoretical truth of which has long been recognised by most thoughtful teachers. In the sequel I shall remark upon its chief justification and upon its inherent difficulties when translated into actual practice; I shall then venture to suggest a plan by which those difficulties can be overcome.

In a memorandum of this association published in October of last year it is stated that "the one aim of natural science is the search for truth based on experimental evidence rather than on authority." The memorandum then goes on to point out other advantages of the study of science, such as the utilitarian value of a knowledge of science and the moral-training value which can be obtained from a study of the history of science. Important as these latter points are, I think that most will agree with me that the really great aims of science teaching are to promote the search for truth and to teach the methods by which truth has been discovered in the past and is still being discovered. I do not wish to be dogmatic on this point—possibly the utility claim is as powerful as that which I have just named—but it is well for us to keep in mind the fact that many of the greatest achievements of applied science owe more to the worker in pure science than to the seeker after immediate gain.

How are the methods of science to be taught? Certainly not by the study of a text-book, however good it may be and however

suitable for a grown-up person in "getting up" the subject for an examination. A boy might learn something about how scientific knowledge grows by simply reading about the process, but it would be infinitely dull reading to him, and he would certainly learn much more by himself repeating the process, on even a very small scale, in practical work. In other words, to get the best training from his work a boy *must* learn on the experimental and heuristic method.

Obviously, then, he must not have a text-book; for a text-book, to answer its purpose as such, contains an accurate account of those very facts and happenings which the boy is supposed to be finding out, and can find out, himself; moreover, it certainly is not practicable to forbid him to look at the results as set out in the book until he has himself carried out the work.

I suppose that I need not enlarge much upon the claims and genuine advantages, in theory at any rate, of the heuristic method. The chief benefits claimed for it are, I take it to be, (i.) that it trains the powers of observation, (ii.) that it gives practice in drawing sound conclusions, (iii.) that it cultivates initiative, and (iv.) that it tends to emphasise the importance of taking pains in small things. A comprehensive list surely, but, in my opinion, one of its very best points is that it tends to give a boy confidence in his own work when conscientiously carried out. It is most discouraging to me to have a boy say in the laboratory, referring, perhaps, to some simple qualitative experiment, "Please, sir, is this what we *ought* to get?" We want to strike at the root-cause of that spirit which led the French chemist Laurent satirically to write that an acid is monobasic or dibasic according to the repute of the chemist who considers it such.

But before I go further let me say that I do not wish to assert that the heuristic method is the one and only method to be used. The reason that it is not more popular—and it seems to be becoming less so daily—is probably that its advocates have overdone it and tried to foster it to the exclusion of other methods. There are certain portions of chemistry, for instance, which can be, and ought to be, studied by research methods, and therefore without a text-book; but there are other portions—I might mention in particular the atomic theory or the purely descriptive work dealing with many industrial processes—which are quite unsuitable for such treatment.

But besides the ordinary text-book which contains a more or less detailed exposition of the subject with which it deals, there is

<sup>1</sup> A paper read before the Association of Public School Science Masters on February 4th, 1917.

another kind of book which is intended to be used in conjunction with a heuristic course. Such a book begins a piece of work by setting out the object of an experiment to be undertaken, and then describes in detail how the work is to be done in the laboratory, but carefully avoids stating the results which are to be found. With such a book there is a danger lest the processes be carried out in a mechanical, unthinking way, but this is often overcome by causing the pupil to answer short questions on the experimental matter which are designed to make him really think. I would certainly not say that there is no place for such books in science teaching; in dealing with large classes they can be of the greatest use, but, after all, they are not text-books, and have few of the advantages of text-books; for instance, they are of practically no use for revision purposes, and are, indeed, little more than books of laboratory instruction. Moreover, just in so far as a book of this kind merges into an ordinary text-book, to the same extent does it defeat its own primary object—that of letting the pupils discover facts for themselves. Some teachers may find such books of great service, but, on the whole, it cannot be said that there is any vital need for them in school work. A few minutes spent in discussing the practical work of the class before beginning, together with a few questions or instructions written on the laboratory blackboard, will go far to answer the purpose of such a book.

The chief conclusion at which we have now arrived is that we must not use an ordinary text-book at all in connection with experimental work, because it does not conform with the method of teaching most to be desired. But this, it must be admitted, will seem to most practical teachers to be an almost hopeless conclusion to arrive at. For what does it mean? It means, in the first place, that if a boy misses a portion of the course, and therefore gets no laboratory notes, he will be completely ignorant of what has been done by the rest of the class. It means, secondly, that he will have to keep very complete notes of what he does and of lecture experiments which he sees; and, in the third place, it means that he will have no book to which he may refer for those parts of the subject which are admittedly unsuitable for heuristic teaching.

In the short space that remains I propose to sketch very briefly a plan—I do not claim to have originated it—by which all the above difficulties can be overcome, which yet allows of the possibility of the bulk of the boys' experimental work being done on "rediscovery" lines. It is this:—When a boy begins work in, say, chemistry he is given (a) a note-book

for laboratory and lecture use, and warned that he must take great care of this; and (b) a stout cardboard file for loose papers, containing when given out a few notes about introductory matter, which it is assumed that he has already studied, and perhaps also question papers for preparation purposes. After a few weeks' work he is given out more notes to go into the file. These will include, in the first place, a brief summary and discussion of what he should have found out from his own experimental work; in the second place, any notes on subsidiary topics which it is desirable that he should have; and, in the third place, more question papers. These notes and papers are to be at once put into the file, as well as the boy's own answers to questions which have been given out earlier, and any essays about the work or on related topics which he has written.

This process of periodically giving out notes is continued for the first two, or even three, years of the boy's study of the subject, with the result that his text-book grows with him and keeps pace with his experimentally acquired knowledge, without his having literally to write his own book, as would be the case if he had to depend entirely on his own notes. Though possibly, at first sight, the method looks somewhat complicated, in actual practice it is quite easily carried out, while the plan of giving out the text-book in small sections is found to have the further advantage of giving added keenness on the part of the pupil.

Lastly, there is another kind of book that ought to be mentioned which one would like to see much more widely used than is the case at present. I refer to what may be called the supplementary reader. The main objects of a book of this type are to promote a general interest in science or to give everyday knowledge about one or more sciences, and to show the real importance in the world around of the subjects treated. Such books can well deal with the history of science, with the relationship of science to industry and general progress, and with the spirit of pure science—as is done so admirably in Prof. R. A. Gregory's "Discovery." These books, of course, are not text-books, and do not give that intimate personal knowledge of science which can only be acquired by observation and experiment in the laboratory, but they are of very great value, none the less.

What I would like to suggest as the ideal combination would be for our pupils to go through their logical course of experimental work, accompanied by the frequent issue of printed notes such as I have already outlined,

and, in addition to this, to have one or more carefully written supplementary readers for occasional use and designed to give a broader outlook on the science work in general. Boys on the classical side of a school might perhaps participate in that part of the work with which the descriptive or supplementary readers are concerned, and leave the more purely experimental training to their scientific brethren.

### PERSONAL PARAGRAPHS.

THE lot of those headmasters who have now to fill vacancies on their teaching staffs is not a happy one. A few days before the commencement of the term, one headmaster found that he had an influx of more than one hundred new boys and that two more members of the staff had been called up for military service. His case was not uncommon. The vacancies are being filled, and in some cases very efficiently filled, by women. Substitutes are also being found among clergymen and ministers, some of whom are working full time with very good results.

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THE Assistant-masters' Association has now found a satisfactory successor to Mr. Payne, so long the secretary of its legal sub-committee. The choice has fallen on Mr. J. A. Mortlock, who has served on the committee for some seven years. He is a man of sound judgment, clear insight, and business aptitude. Under his care the work of the committee will be continued on the lines duly laid down by Mr. Payne.

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MR. G. J. THOMAS, of Trent College, has been appointed headmaster of the County Secondary School, Llanelli. Mr. Thomas was educated at University College, Aberystwyth, and at Jesus College, Oxford. His first appointment was at Newport Grammar School, Isle of Wight. After holding masterships in several small schools he went to University College School in 1902 and to Trent College in 1906.

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THE REV. H. A. WATTS, of the Secondary School at Ipswich, has been appointed headmaster of the Cathedral School, Bristol. Mr. Watts was educated at Worcester Grammar School and Christ's College, Cambridge.

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THE BISHOP OF WINCHESTER has unveiled a stained-glass window in the chapel of Claves-

more School, Winchester, in memory of Lieut. R. B. Whyte, 3rd Black Watch. Lieut. Whyte was the son of the Rev. Principal Alexander Whyte, of Edinburgh. From Clavesmore he went to Balliol College, Oxford. He was killed at the battle of Loos in September, 1915.

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THE Bishop, in his short address, pointed out the importance of deeds, not words; but deeds require two things: they require interpretation and they require honour. They may be interpreted in words or they may be interpreted as in this case—pictorially. "The artist has gone to work and put before you the fact that there was a young fellow preparing for life—that is what gives importance to the studies that he did, and the practical life that he lived here, and then afterwards—but I do not dwell upon it. I daresay it has been said to you already, and I daresay it will be said again many times—at any rate, there is the explanation of the artist set out so that you may see the significance of young lives like your own. And then we go on to the honour, and we see how that young life has been able to set us an example which stirs the hearts of us all and gives us something to live by, to be nobler and better men."

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THE Bishop next spoke of the good that has come from the war and of the greatest sacrifice that man can make. "I want you boys here to take this to heart, for here, at any rate, is one thing that I can say with the certainty that you will understand it, and with the certainty that the deeper it goes into your hearts the better it will be; if we train ourselves on that principle, that *giving is better than getting*, there is no better ideal. Work it out and live it out. It will make all the difference whether your life is sparkling with true honour or whether it is cramped and dwindled into the selfishness of those who think only of themselves."

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MR. A. L. SMITH, the Master of Balliol, who has recently been added to the governors of Blundell's School, Tiverton, in speaking of reconstruction, described the undergraduates at the older universities as a most democratic society, always willing to accept men at their true worth irrespective of class distinctions. There are still many men who know the universities well who do not agree with him in this.

ONLOOKER.

## MEASURING THE RESULTS OF AMERICAN EDUCATION.

By PETER SANDIFORD, M.Sc., M.A., Ph.D.,  
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THE most casual of readers cannot fail to remark the astonishingly large amount of space given up in current American educational journals to the discussion of such topics as "measurement of results in education" and "use of educational measuring scales." The whole of the North American Continent is being swept by the movement, and scarcely a month passes without the publication of a new measuring scale for the evaluation of some branch of school-work. Americans want to know if their schools are efficient, and consequently want to be in a position to measure the results of their teaching accurately.

The present movement for measurement (one almost wrote craze, for the enthusiasms of American educators almost amount to crazes at times) originated with the newer experimental methods in psychology. In the psychological laboratory it was customary to test adults individually, but soon tests were derived which could be applied to school children grouped in classes. Out of these mental tests for school children developed a new technique in statistical interpretation. The science of statistics became the handmaid of the educational investigator, and soon the words median, probable error, standard deviation, and the like became as familiar to educators as they were to mathematicians and actuaries.

Mental tests, however, dealt with memory, imagination, quickness of perception, accuracy of movement, and so forth. Were there no means of testing such homely things as handwriting, drawing, spelling, and arithmetic, problems with which the average teacher had daily to grapple? It was here that the methodology which had been evolved with mental tests, and the applications of statistics, proved of value.

At the outset the problem worked upon was "how to change subjective into objective standards." The difference between the two can be simply illustrated. Suppose a teacher marks to-day a hundred compositions on a percentage basis. Is there any guarantee that his standards of values remain constant during the marking? Do they not fluctuate from hour to hour? Does the teacher not tend to "mark easier" after a good dinner when his pipe is drawing well than when suffering the discomfort of hunger? Would the marks given by the teacher on re-marking the papers to-morrow be exactly the same or not as he gave to-day? The answers of any honest teacher to these questions would show that not only were the standards subjective, but they were liable to comparatively violent fluctuations. Thus a 60 per cent. mark is far from representing a constant thing, even in the same individual. When two or more individuals are concerned with the marking of the same paper it is safe to say that only by chance will their marks coincide. For instance, Dr. Daniel Starch made the following simple investigation to determine the trustworthiness of teachers' marks. Two examination scripts

in English written by high-school pupils were photographed and reproduced by means of plates, so that all the excellences and defects of the originals were shown. These two papers were marked by 142 teachers of English in accordance with their current standards and practice. The range varied from 64 per cent. to 98 per cent. for the first paper, and from 50 per cent. to 99 per cent. for the second. Since the passing mark was fixed at 75 per cent., it followed that some competent teachers of English failed a candidate whom others considered so good as to be almost perfect. This case is by no means an outstanding one. The writer was once one of a number of teachers who observed a student teach a practical lesson. The marks given for the lesson ranged from 50 to 90 per cent., the pass mark being fixed at 60. And so with other cases. Any staff, either of an elementary or a secondary school, can easily convince itself of the unreliability of its judgments, so far as the marking of papers in any subject is concerned, by some such simple means.

A pass mark of 60 per cent. is really meaningless so long as no effort is made to remove the influence of subjective variations. It is possible to pass every candidate in an examination when the pass mark is fixed as high as 90 per cent.; one has only to allow one's subjective standards to be low enough. On the other hand, every candidate could be failed with the pass mark as low as 10 per cent.; one has only to make a 10 per cent. standard sufficiently high.

Every effort which aims at making an examination a fair test is directed towards removing or reducing the variabilities of subjective standards. Some endeavours are more successful than others. The examiner who first finds a medium paper, determines a mark about which it is worth, and then marks the other papers above and below it as a central standard, is far more likely to preserve constant conditions than is the examiner who marks his papers from some hypothetical 100 per cent. standard of perfection. In the first case the standard can be referred to at any time, and the marks centre around it, so that no paper, not even the most extreme, can be very far removed from it in excellence; whereas, in the second, the 100 per cent. standard is an intangible and ever-shifting measure, and the very bad papers may be as far removed from it as 60 to 70 marks. The first method is preferable, because it produces an objective standard—to be sure, an imperfect one, yet nevertheless there is a something which can be referred to again and again.

The whole secret lies in translating subjective into objective standards, in removing the subject from the region of individual judgment and opinion into the sphere of scientific objective measurement. How may this be done? Consider for a moment the problem of measurement of temperature. Before the time of the invention of thermometers people could only judge temperature by cutaneous sensations, and record it by using such adjectives as freezing, very cold, cold, tepid, hot, boiling hot, and the like. Thermometry changed all that. We can now measure temperature accurately to within one-thousandth of a

degree Centigrade. A subjective standard has been made into an objective, impersonal one.

One of the first American workers on the problem of measuring scales for school subjects was Dr. E. L. Thorndike, of Columbia University, who made a scale for measuring the handwriting of school children. Handwriting is an excellent example of the untrustworthiness of human judgments. We all know what we mean by good handwriting, but unfortunately what we mean by good handwriting is not what other and equally good judges mean by it. That is, if ten judges got forty samples of children's handwriting, and each arranged them in order of merit, the same arrangement of values would not be found in any two of the cases, except by chance. *Quot homines, tot sententiae.* Yet there would be some approach to unanimity of choice. The very bad samples would invariably be placed in a low position by all the judges; the very good ones in a high position. If, now, the average position of a sample as judged by ten competent judges were found, that mark would be a more trustworthy indication of its true position than any single judge's opinion.

This method of averaging a number of competent judges' opinions was used by Dr. Thorndike in making his scale for handwriting. Forty judges were given in turn 1,000 samples of handwriting, ranging from the worst to the best of the handwriting of pupils in the sixth to the eighth grade, and asked to place each in one of eleven groups. It can easily be shown experimentally that in judging quality the human mind is incapable of determining in non-varying fashion more than twenty or thirty different degrees. So it was found impossible to place the 1,000 samples in 1,000 different classes. They were found to fall naturally into eleven different groups, each group consisting of samples of approximately equal merit, merit in this case meaning "general goodness" of the handwriting, a combination of grace and legibility.

When all the judgments had been made the averages of the samples were calculated. Some of these averages fell at whole numbers like 6, 7, 8, and 9, and these samples were taken to form the scale. There were minor refinements which need not be considered.) The difficulty of a zero sample had next to be overcome. Some artificial scribbling, which could be recognised as an attempt at writing, but possessed of neither grace nor legibility, was made the zero. The worst of the real samples then stood at 4. Other artificial samples which extended the scale to 10 at the upper end were also introduced.

The method of using the scale is simplicity itself. All that one does is to take the sample of handwriting to be judged, place it against the scale, and run it up or down until it stands opposite a sample of handwriting equivalent in merit. The point one stops at represents the merit of the handwriting. It is evident that the judging has almost been wholly removed from the subjective to the objective sphere. It is true that although two judges may still differ as to whether a sample should be marked, say, 12 or 13, that is the extent of the possible disagreement. The scale measures handwriting just as accurately as a penny thermometer measures temperature. What

is now needed is simply an improved and more refined scale.

The use of such a measuring scale as that described above removes the judgment of handwriting from the influence of time and space, and especially from the region of mere asseveration. The handwriting of a Roman boy of the time of Julius Caesar, if such existed, could be judged as easily as the writing of a modern schoolboy in London or New York. Different educational systems can be tested, different methods of teaching handwriting can be compared, schools in the cities can be measured against schools in the country, and all in a perfectly fair and just manner.

Following the handwriting scale came, in quick succession, scales for composition, drawing, spelling, and reading. The underlying idea in all of them is that the combined judgment of a number of competent judges is more trustworthy than that of a single judge. But the standardisation of school products did not stop with these. In connection with arithmetic, spelling, Latin, German, French, etc., tests were evolved which aimed at the location of ability in terms of grades; that is, in the determination of the standard ability in spelling, for example, a normal second grade pupil should be expected to reach. The subject is too big for adequate treatment in this short article, but the following list will perhaps give some indication of the procedure followed:—

2nd Grade	3rd Grade	4th Grade	5th Grade	6th Grade	7th Grade	8th Grade
foot	fill	forty	several	decide	district	perfected
get	point	rate	leaving	general	consideration	tariff
for	state	children	publish	manner	athletic	emergency
horse	ready	prison	o'clock	too	distinguish	corporation
cut	almost	title	running	automobile	evidence	convenience
well	high	getting	known	victim	conference	receipt
name	even	need	secure	hospital	admission	cordially
room	done	throw	wait	neither	liquor	discussion
left	pass	feel	manner	toward	experience	appreciate
		Tuesday	flight	business	receive	decision

This list is seen to be composed of a set of ten words for each of seven grades of the elementary school. Each set is selected so that the words composing it are of equal difficulty or approximately so, and the standard imposed is such that seven out of ten children of a grade on an average can spell all the words designed for the grade. This illustrative test does not give a fair idea of the work that has been accomplished, because the chance of familiarity with these particular words is rather large, but it is sufficient to give an inkling of the methods employed. More extended lists of spellings have, of course, been standardised.

American educators have also extended their sphere of operations to another field, namely, to that known as educational surveys. These are educational stock-takings on a large scale, and are not unlike those undertaken between 1902 and 1910 by Dr. Michael E. Sadler for Liverpool, Sheffield, Newcastle, Derbyshire, Essex, etc., in England. In some of them the standard tests outlined above have been employed. The surveys of Vermont, Ohio, Portland, and Butte are especially important. Space forbids more than a mere mention of them. If, however, sufficient has been said to stimulate English educators to further inquiry into an important aspect of American education, the writer will feel amply repaid.

## THE OBJECT AND CONDUCT OF INTERNAL EXAMINATIONS.<sup>1</sup>

**THE NECESSITY FOR INTERNAL EXAMINATIONS.**—The objections that have been urged against examinations are valid against external examinations only; and even then only when the examinations are allowed to invert the natural order of things by determining the course of study instead of being determined by it. Against internal examinations the objections lose all their force. Indeed, the slightest reflection will show that examinations enter as an essential factor into the process of education. They cannot be dispensed with. Every question is a test, every task performed by the pupil is a test; and an examination is nothing but a systematised series of tests. Without tests of some kind the teacher can never discover the abilities and attainments of his pupils, and can never measure the progress they make under his teaching. The devising of suitable tests is regarded as one of the most pressing problems of modern pedagogical research, and it is engaging the earnest attention of an increasing number of investigators. It is not too much to say that much of the sterility of modern teaching is due to a deficiency in the right kind of testing. In our schools to-day there is too much talking and too little testing of the right type.

In addition to the constant and vigilant testing which goes hand in hand with teaching, it is necessary for the head teacher, however closely he may be in touch with the work of the school, to confirm his impressions and to arrive at well-founded estimates by properly ordered internal examinations.

**THE OBJECTS OF INTERNAL EXAMINATIONS.**—An internal examination may legitimately fulfil many functions. It serves to test the knowledge, capacity, and progress of individual pupils; to gauge the suitability of the curriculum, syllabuses and methods of instruction; and to provide a sound basis for classification and promotion. It influences the aims and methods of the staff; and by revealing faults and failures as well as successes, it becomes a valuable ally of teaching.

It is from the point of view of the pupils that the "examination" derives its chief importance, and is, indeed, indispensable.

A just estimate of the pupil's progress demands a fuller provision for the testing of back work, a revision of the type of questions set, and an extension of field so as to bring in some of the school activities which are now left unrecorded.

It is very important that the examinations should be adapted to and influenced by the syllabuses in use, and not conversely.

One cannot but deplore the inhibitive effect of the ordinary examination on the enterprise of teachers and on their willingness to try new methods. The position in a school of an assistant-teacher of originality and initiative is not always an easy one. The examination should encourage teachers by taking into account aims and methods as well as syllabuses.

For the ordinary teacher the examination should

serve as a signpost; a few of the questions should be a little ahead of the practice of the classroom, and should call for ability in the acquisition and application of knowledge as well as its reproduction. This will no doubt be done much more extensively under the present conditions of greater freedom.

**PREPARED FOR AN EXAMINATION.**—The practical details of an examination need to be thought out beforehand and as full a preparation made as possible. The tests should all be ready and a time-table drawn up so that the normal school life shall be disturbed for the minimum period.

The *type of question* is capable of great improvement. Memory must be tested, so should habit and mechanical dexterity. "Memory cannot with safety be slighted or neglected. Many things we require to know precisely, and the memory test is perfectly legitimate within its own sphere." Writing, spelling, and tables, which should become largely automatic as the direct results of teaching, may be tested from the work specifically taught by the teacher.

But these should not be the only things tested. The indirect effects of teaching revealed in the capacity of the children for using knowledge, for acquiring it unaided, for facing new situations and problems, should be tested. The indirect effects of teaching include further the general attitude of the pupils towards their work, their teacher, and their school, and the ideals they unconsciously form.

The criticisms often heard as to the inability of pupils from elementary schools to act for themselves as to their lack of initiative and their incapacity for sustained effort, indicate, in so far as they are true, the desirability of a definite emphasis of the points mentioned.

A sense of proportion needs to be developed. It is part of the science of a really skilful examiner to know that there are some things that are not worth knowing. It will be then realised that questions on historical nobodies, such as Perkin Warbeck and Lambert Simnel, are out of place, and that a year's geography cannot be tested by such questions as: Say all you know about Australia or the Mississippi, or What and where are Bombay, Port Arthur, etc.? What is Kaolin? What is Newfoundland? Name the productions of Canada. Name six of the productions of Europe. What do you know about William Wallace and Wolsey? What and where are Ladoga, Lyons, Apennines, Constance, and Pyrenees? These questions are taken from examination papers, and questions of this type have been the rule rather than the exception. Information on these points is desirable, but it should not be always tested in this dulling form. Mr. T. Raymont suggests that an examiner should himself face the following questions: "Will this question have a good effect on the teaching? Will it encourage the study of the right kind of thing in the right way? Is it perfectly intelligible and properly adapted to the pupil's stage of development and professed attainment? Will it discourage the learning by rote of what is not understood?"

Mr. Stanley Leathes, in his book, "What is Education?" states: "It is hard work to set an examination paper, none harder. The examiner should pass all hi-

<sup>1</sup> From a pamphlet, issued by the London County Council, on Internal Examinations in Public Elementary Schools.

knowledge through his mind to discover new points of new, new associations. To create a new question means that you have found a new aspect of the obvious and familiar. But, as a rule, old questions can be given a new face. The examiner who tries to vary his papers by straying into new fields of fact will almost certainly set unfair questions; and unfair questions should never be set."

Some of the questions set to the older children should involve the acquisition or investigation of facts at the time of the examination. To answer these the pupils should have access to books, maps, and other sources of information.

In the upper classes of some schools individual children study a given subject for some weeks. The examination should take into account work of this nature.

There is much other material which should come within the purview of the examiner: back work, of course, but also school journeys, educational visits, silent reading, music, games, work done in the handicraft and domestic economy centres, books read, weather charts—not necessarily for direct testing and assessment, but as important factors to be taken into account. Poor questions are sometimes due to a general anxiety for good results on paper, but they are also from the lack of private reading.

The importance of testing intelligence cannot be over-emphasised. The distinction between intelligence and knowledge, between capacity and content, between ability and attainment, is for educational purposes the most fundamental that can be drawn among the mental powers and processes which the teacher tries to guide and develop.

It seems impossible quite to disentangle intelligence from the knowledge through which intelligence shows itself; it is difficult to tell the capacity of a mind without finding out what is in it. Binet encountered that difficulty, and many of his so-called tests of intelligence are partly, if not entirely, measures of other factors besides intelligence. Setting aside the wider meaning of the term, intelligence, as here used, means the power to apply old knowledge to new material—the capacity to deal with a new situation. The solution of "problems" in arithmetic is a case in point. But applied arithmetic is not the only subject that affords scope for the testing of intelligence; every subject gives abundant opportunity. The unaided acquisition of new knowledge is a special field for its exercise. Tests of intelligence should, for several reasons, be more frequently set than tests of knowledge and skill. They kill two birds with one stone, since they test knowledge and intelligence at the same time; they serve to emphasise the superiority of the knowledge which is power over the knowledge which is vanity, of usable over unusable knowledge; they exercise a faculty which is highly serviceable to the community; and they afford a basis for evaluating the method of teaching; for it can be shown that the same knowledges required by different methods have not the same degree of usefulness. The extent to which a pupil can apply the knowledge he has acquired depends largely upon the way in which he has acquired it.

To devise questions which make a just demand upon

a pupil's thoughtfulness and ingenuity is no easy matter. It is never wise to attempt to draw up an examination paper at one sitting. The examiner should, during his private reading and during his observations of the term's work of his school, make notes of points upon which good questions may be set.

The modern text-books in regional geography emphasise the rational connection between geographical facts and suggest numerous questions which bring inference into play, and which ask "why" as well as "what"? How do you account for the density of the population in Staffordshire? Why has the population of Bournemouth increased so rapidly within the last thirty years while the population of York has remained stationary? Take your atlases and compare the Baltic with the Mediterranean: write down the points of resemblance and of difference, and state any facts you can infer from what the atlas tells you. Find out from your atlas the distance from London to Glasgow. How long would it take you to go there by train? What would the third-class fare be at a penny a mile? After you have written down your answers consult a railway time-table and find the actual time and fare. Explain the difference between your estimate and what the time-table stated. Questions of this nature should constantly accompany the teaching and should figure largely in the formal examination. For data for reasoning from statistics the teacher will find Whitaker's Almanack useful.

In the field of history opportunity for reasoning is more scanty, not because the relation between cause and effect is less rigid, but because the conditions are so numerous and complex that inference must partake more of the nature of guesswork. Still, much may be done to foster thought, as distinct from memory. Questions upon the causes and effects of the civil war in the reign of Charles I. are better than questions on the dates and places of the battles. Questions on the characters of great historical personages, as revealed by their acts, are better than questions upon the dates of their birth and death. Questions which ask for an explanation of to-day in the light of yesterday are better than questions which ask about unrelated events. But one of the main advantages of history as a school subject is that it affords the older pupils practice in the judicious use of books. These pupils should frequently be set to trace a movement through several reigns, to compare the treatment of the same topic or the same events by different writers, and to make digests which will separate the essential from the unessential. These are difficult things for even bright children of thirteen to do; but however imperfectly they are done, much that is of value is learnt in the mere attempt.

In physics, and to a lesser extent hygiene, the setting of thought-compelling questions should present no difficulties; but in Nature-study, where observation plays so important a part, the reasoning aspect is likely to be overlooked. The alert teacher will, however, find innumerable problems arising as he studies Nature, directly or indirectly. What proportion of a plant's substance is derived from the air, and what proportion from the soil? How can this be ascertained? How can we discover the minimum conditions neces-

sary for the germination of a bean? Aristotle remarked that a bee will visit one type of flower only during one journey from the hive. Find out if this is true, and, if true, point out its significance from the point of view of the flower. Just as in history, so in Nature-study, a quest is often better than a question.

How should intelligence be tested in the realm of literature? Here it is well to remember that children of elementary-school age are much more interested in the matter than in the form of what they read. Indeed, it is only near the close of their school career that they can be brought to think at all profitably about the way in which a thing is said as distinct from the thing said. Hence the questions should be based mainly upon the subject-matter. If Shakespeare be studied, questions about character should frequently be set; for revelation of character is the very essence of the plays. Describe the character of Julius Cæsar as depicted by Shakespeare. Use the text-book and quote passages to support your view. Who is the hero of the play? Give your reasons for thinking so. This is a better type than questions on verbal peculiarities or on obscure passages about the meaning of which commentators disagree.

In testing arithmetic it is well that the examiner should bear distinctly in mind the three branches of the subject—mechanical, practical, and problematic—and should either set three separate papers or see that each branch is duly represented in one paper. In the paper on problems and practical arithmetic the demand on intelligence is necessarily supreme.

In framing questions of this kind regard should be had for the knowledge the pupils may reasonably be expected to have. It would, for instance, be unwise to ask children at an examination to explain why a cold poker placed over a Bunsen flame immediately gets wet, if they had never studied the nature of combustion. As a casual question in class, however, it might form an excellent starting point of a line of inquiry.

We cannot over-estimate the importance of constantly testing back work. When it is found that the syllabus for a class has been imperfectly mastered, a series of searching tests may be necessary to discover the root of the difficulty. Failure to deal with advanced examples in arithmetic may, for instance, be merely due to an imperfect knowledge of the multiplication table. When the weakness is disclosed, the remedy should be applied at once, and tests applied later to make sure that the remedy has really been efficacious. If a mid-term test by the class teachers or anybody else reveals the fact that the syllabus as drawn up cannot successfully be dealt with because the preliminary work has not been mastered, no hesitation should be felt towards immediately modifying the syllabus to meet the needs of the pupils—either of the whole class or of a section of the class. Such a step is essential where a subject is logically progressive and has to be mastered step by step. Given a few rudimentary notions, we can easily study the geography of Asia without having a preliminary knowledge of the geography of Europe; but to attempt any division of money without having mastered simple subtraction is obviously to court failure. Every head teacher knows that much of the work in

the upper part of the school is hampered by the weakness of the pupils in such fundamental processes as mechanical computation, the enunciation and spelling of the commonest English words, and the construction of all but the simplest sentences. The diagnosis of such cases is one of the most important purposes served by tests and examinations.

## THE PRINCIPLES OF PHYSICAL EDUCATION.

THE committee of the Uplands Association has recently been engaged on an inquiry into the meaning and scope of what is popularly known as physical education. The subject was reviewed from several points of view by members who attended the August meeting at Bangor, and has also been discussed in the *Uplands Circular*. The committee has now put its views into final shape and offers them for the consideration both of teachers and of administrators who are engaged in the study of reconstruction.

**I. THE GENERAL PRINCIPLE.**—During childhood (up to thirteen years of age) the child should manifest a purposeful, joyous activity in all his pursuits. His physical development is, therefore, just one aspect of an activity which absorbs his entire being, body and mind in unison. Growth of physical organs is necessary accompaniment of such activity, but the healthy child is not specifically interested in this growth. Bodily growth demands a very large amount of movement, and this should be afforded by the variety of practical, æsthetic, and recreative pursuit to which his developing human nature responds.

This is the normal procedure; it implies that there should be large opportunities for work and play in the open air, and that school pursuits generally should involve much more activity than is commonly permitted at the present day.

Under subnormal conditions, such as, e.g., prevail in the congested areas of large cities or are found in children suffering from malformation, remedial measures may be approved to supplement (but not to replace) the wholesome activities of a rational, healthy life. Only under such conditions can the massed movement of Swedish or other systems be countenanced. The principle applies in the same way to breathing exercises. This device imposed for a few minutes at stated intervals day by day may serve as a partial remedy against stunted development, when children are too much confined and thus are prevented from inhaling fresh air with spontaneous vigour for an adequate time.

**II. THE FUNCTION OF DRILL.**—All collective or mass instruction can be called "drill" if the instructor aims to practise his class in some specific exercise. All such massed movements, as in rifle and bayonet drill in the Army, swimming or cricket drill in schools, are only serviceable as preliminary to real activities in which each performer must act for himself. In a similar way soldiers and sailors, like other adults, can appreciate the benefit of gymnastic drill, which among children is only accepted as a physical relief from sitting at desks. Apart from such *realised* motives

drill is boredom to an intelligent mind, and has neither psychological nor moral value; parades and marches imposed in the belief that drill in itself is educative have the contrary effect, and induce stupidity both in the teacher and the taught. The assumption that a general power of mental alertness is trained by inducing smart responses to specific commands is baseless. Drill, therefore, can only function as a particular type of class-teaching, and it can only be sanctioned when a specific exercise is profitably learnt through precise directions which the whole of a class can follow at once.

**III. DEVELOPMENT.**—If development follows its normal course the instinctive desire for incessant movement during infancy is reinforced by habits which will lead the boy and girl, first, to cultivate active pursuits out of doors; secondly, to accept the more controlled movements which are provided, on one side by ordered recreation in games, and on the other by industrial pursuits in workshop, garden, or home.

After fourteen years of age, and more frequently after eighteen years of age, many young people acquire a self-regarding interest in some form of physical development—e.g. in swimming, running, gymnastics; these, as well as competitive games, should be allowed their fair share of public support, in school as in parks and open spaces. At this period life, however, each person can claim an increasing freedom of choice as between differing modes of exercise. The current practice of many secondary schools to be deprecated, where interest is confined to a few conventional games and sports, especially when the desire to secure good "results" restricts participation to the more proficient.

Under normal conditions the habits formed in healthy childhood will lead the adolescent to keep himself physically fit, and therefore to take an appropriate part in games or the like; whatever control is exercised over youth of both sexes, whether in schools, workshop, or offices, this control should not debar them from opportunity to attain normal physical development at maturity.

Further investigation is needed in detailed scientific examination at each of these stages of development to determine the type of gymnastics or games congenial to the powers and tastes of those upon whom they are imposed.

**IV. MUSIC IN RELATION TO BODILY EXERCISE.**—(a) Where large numbers of children move quickly from place to place they will find pleasure (as do adults also) in keeping step with the accent of song or musical instrument. Any other form of musical drill (see II. above) has no meaning, and therefore no educational value.

(b) Every normal child is stimulated to make spontaneous rhythmical movements of the limbs in correspondence with the rhythm of music. The teacher of music can therefore help the child to a conscious appreciation of rhythm, identifying the rhythms of music with the rhythms of movement, and can therefore offer him a technique, such as that invented by Dalcroze. Such an enlargement of musical experience promotes also the grace and vigour of the body; along

with singing games and folk dancing it should hold a prominent place in the activities of childhood.

Conventional dancing can only be sanctioned at a later period, when young people are sufficiently developed to share the new social interests of sex to which dancing responds.

At every stage the value of such pursuits in respect of physical education should be recognised, especially if attention is paid to fresh air and hygienic dress; but the aesthetic and the moral value of "good" music and of "good" dancing are even more important, since the influence of bad art is disastrous.

Since music has a social purpose, all these forms of expressing rhythm should be associated with festival, drama, and other social functions (supplying to the school community and its circle a congenial field for the expression of delight in every form of fine art).

**V. PHYSICAL TRAINING AND PHYSIOLOGY.**—Little importance can be attached during childhood to the acquiring of information about the functions of bodily organs, since normal human beings form right habits at an early age, induced by authority and by suggestion rather than by research or reason. In later adolescence physiology, as a branch of biology, affords explanations for which minds, informed by full contact with the natural world at earlier stages, are quite ready; but at this period also all that is required for normal development can be conveyed by brief empirical information. The will is not strengthened by focussing the attention on scientific aspects either of digestion, of circulation, of nerve and brain processes, or of sex.

#### SURSUM CORDA.

**TO MY FELLOW-TEACHERS.**—We are now in the third year of a war unprecedented in its demands upon the endurance, the courage, and the devotion of our people. But our end is not yet accomplished, and the great cause which inspires the national effort is about to make still further demands upon us. We believe that we are now approaching the decisive hour of the war, and though this means more sacrifice it means also sacrifice tempered by confidence and vision of an end which is not remote.

Under arrangements made between the Army Council and the Board of Education it has hitherto been possible to reserve for the service of the schools a certain number of men teachers of military age. The enemy has now brought the whole population of the German Empire under a scheme of National Service and has impressed the inhabitants of occupied territory for forced labour. In order to do our part in countering his efforts and to secure at once the fullest measure of man power which, in expert opinion, is required to bring the war to a successful conclusion, we now have to give up more of the men remaining in our educational reserve. I am fully alive to the effect of this withdrawal on educational organisation, and I do not blind myself to the fact that, for the time being, the school life of the country will suffer; but the call of the nation at this critical moment of its history cannot be denied, and I know that the teaching profession will meet this call in the spirit in which it has

responded to every other call of duty since the beginning of the war.

In no age of our history has the character of the British people displayed itself to such advantage as in the present struggle. The Napoleonic Wars gave evidence of the tenacity and courage of our aristocracy and of that comparatively small proportion of the population which was then dedicated to the service of arms; but the land was full of division, of bitterness, and of misery, the voice of party spirit was never silent, so that the impartial student, comparing the annals of those times with the story of our country during the present war, must feel how great has been the improvement in public magnanimity, in civic cohesion, and in that living and educated sense of ethical issues which is the governing condition of human progress.

In this war, which in a degree far higher than any war known to history has enlisted the total energy of the nation, the teaching profession has borne an honourable part. When war broke out the teachers did not hesitate to volunteer. Our returns last October showed that some 19,000 teachers from State-aided elementary and secondary schools had joined the colours, and of these many had laid down their lives or had been so gravely incapacitated by wounds or disease as to be unable to resume their former occupation. Those who remained behind have cheerfully grappled with the problems caused by depleted school staffs and the occupation of school buildings for military purposes, and wherever any form of suitable civic service has offered itself they have stepped forward to undertake it. In the schools themselves they have been active in spreading abroad among the young those elementary notions of simple duty and self-sacrifice the better appreciation of which often grows out of great public calamities.

But every sound system of education assumes as its fundamental principle that society is organised for peace, and that in the cultivation of the arts of peace man obtains his highest development. It is not premature that we teachers should fix our eyes mainly on the greater future which lies beyond the end of the war. The proclamation of peace and victory in the field will summon us, not to complacent repose, but to greater efforts for a more enduring victory. The future welfare of the nation depends upon its schools. This is a truism, but it is a truism upon which it is wise to insist. Schools depend on teachers, and this means two things. First of all we must secure the teachers, and in this connection we cannot disregard the many new forms of attractive activity which modern life is unfolding on every side. I regard the establishment on a sound basis of an efficient and devoted corps of teachers as a public necessity, less obvious perhaps, but no less imperious, than the maintenance of the fighting forces of the Crown. Secondly, the teachers must give of their best. Never will the effort of teachers be more needed than in the period of reconstruction which will ensue upon this war. I do not doubt that you will meet this need in a spirit which leaves no room for the perfunctory or niggardly performance of duty. Those who have borne the burden of these troublous times at home will join in

the great work of education with their comrades who return from the field, having learnt once more the lesson that no experience in life is alien to him who aspires to teach.

The war has confirmed the conviction that the moral and material strength of the realm is founded upon qualities of character and intelligence which education forms and cultivates. The national system of education has indeed proved its worth in the war, but the future welfare and security of the Empire require that its influence should be deepened and widened.

I know that for this task the united efforts of many men and women, and of many agencies, both official and voluntary, are needed. The Board of Education, the local education authorities and their officers, the universities, the governors and managers of schools, must all do their part, endeavouring to enlist the sympathy and support of the parents and the active interest of industry and commerce. But I speak now as a teacher to teachers. The career of a teacher is an honourable and liberal profession; at its highest it is a vocation—a vocation which in every age has claimed the cheerful dedication of many noble lives. Let us rise to the height of our calling. *Sursum corda.*

H. A. L. FISHER.

Board of Education, February 19th.

## EDUCATIONAL EXPERIMENTS IN AMERICA.

THE United States General Education Board announces that it will provide Teachers College of Columbia University with the funds necessary to establish and conduct a school for the purpose of constructive work in the reorganisation of elementary and secondary education. The Board has been convinced by President Eliot and others of the importance of supporting a school conducted in co-operation with Teachers College for the purpose of working out by cautious experiments suggested improvements in the curriculum, so that it may be better adapted to the needs of modern life than is the curriculum now in common use. The organisation of the school under the auspices of Teachers College ensures the careful study of every experiment by the faculty of Teachers College, many of whom are among the ablest critics of educational procedure in the world. Experiments are to be made with a view to determine what methods of teaching English, French, and German give the most substantial practical results. New methods of teaching literature, history, and civics will be tried, and in this connection efforts will be made to ascertain whether the important ancient classics cannot be effectively used in translations. Latin and Greek as languages will not be taught in the school. Science, industry, and the domestic arts will be prominent throughout the school, and increased attention will be given to music, drawing, and art. The subject of mathematics will receive special consideration in the hope of working out a rational course of study which connects the study of mathematics with its use.

Organised recreation, play, and games will be provided for. The school will frankly discard that theory of education known as "formal discipline" and will

undertake to secure training through the careful and thorough study of subjects which are in themselves valuable. It is believed that a much more effective discipline can be thus secured. The director of the school will be Prof. Otis W. Caldwell, now head of the Department of Natural Sciences in the School of Education of the University of Chicago. It is expected that the school will open with part of its classes in the autumn of 1917. Both boys and girls from six years of age up will be admitted, though they will not necessarily be in the same classes in all subjects. It is expected that the tuition fees will be moderate, and that there will be a number of free and partial scholarships.

## ITEMS OF INTEREST.

### GENERAL.

THE Board of Education has sanctioned the conducting of experiments with simplified spelling in several elementary schools in England.

At a representative conference of examining bodies in Great Britain held on March 15th at the Board of Education under the presidency of Mr. A. T. Davies, C.B., chairman of the British Prisoners of War Book Scheme (Educational), it was decided to approve certain proposals for the encouragement and recognition of the studies pursued by prisoners during their internment. Steps are being taken to give effect to these proposals, and various examining bodies (including most of the universities) have already intimated their willingness to recognise work done and examinations passed in the camps, and to extend to the men on their return facilities for sitting for examinations under conditions which will take account both of their special circumstances and their needs. A message was read from the President of the Board of Education in which Mr. Fisher expressed sympathy with the objects of the conference. It is intended that the decision arrived at shall be communicated, as soon as possible, as "a message of encouragement and hope" to the various internment camps in enemy and neutral countries. Meanwhile, it was suggested that friends and relatives of student prisoners might do them a service if, when writing to them, they would direct their attention to the steps in this connection which are being taken on their behalf.

THE outstanding periods of our educational history (such as 1833, 1846, 1870, and 1902) have in each case been marked by a great output of more or less controversial pamphlets and addresses. Judged from this point of view alone, the present seems likely to take rank as one of these periods. Among the pamphlets to which the future historian of English education may turn with interest are Sir Samuel Dill's on "Secondary Education after the War," and Sir Clifford Allbutt's on "Science in the School"—each of them a notable example, one from a man of letters and the other from a man of science, of temperate and cogent argument. The Poet Laureate's eloquent address to the Swindon branch of the W.E.A., now issued in pamphlet form, is a warning against falling

into the snare of over-intellectualising our education, by way of reaction against the opposite error which has hitherto characterised us. The report of the Conference on New Ideals in Education, held at Oxford last summer, is again in effect a set of pamphlets on various aspects of the educational crisis. Other noteworthy examples are Mr. C. Leeson's on "The Child and the War"; and the Barnett House papers, of which the first number is Mr. C. E. B. Russell's pamphlet on "The Problem of Juvenile Crime," and the second, Mr. Spurley Hey's on "The Development of the Education of Wage-earners, with special reference to the Education of Older Boys and Girls."

IN the above connection, we may direct special attention to the lectures on social reconstruction after the war delivered at the interdenominational summer school held at Swanwick last June and July, and now published by Messrs. Bell under the title "The Hope for Society." An introductory lecture by the Bishop of Oxford is followed by eleven others, in which various aspects of reconstruction are dealt with by such well-known persons as Mr. J. A. Hobson, Mr. Clutton Brock, Dr. A. J. Carlyle, Miss M. Bondfield, Mrs. Pethick Lawrence, and Mr. Ernest Barker. It was well worth while placing these utterances within reach of a larger public than the original audiences. Mr. Clutton Brock's address, in which he pleads for an austerity which is quite consistent with increased happiness, is, we think, by itself worth the three shillings which the book costs, though some of the other lectures are equally good of their kind. If Mr. Clutton Brock's appeal could sink into the nation's mind and heart, we should hear less of there being no money for better education. We note that this summer school will again be held at Swanwick this year.

THE Board of Education's Syllabus of Physical Exercises, a revised edition of which was published in 1909, is now in general use in elementary schools throughout the country. Though the presumption is always against a fixed syllabus prescribed by authority, there can be little doubt that the issue of this particular syllabus has been amply justified, for orderly method and clear aim have by its means taken the place of chaos. This is true not only of the elementary schools, but also of the training colleges. In the colleges, as well as in the numerous classes for teachers set up by the local authorities, the Board's syllabus has formed the basis of instruction in physical exercises. The importance of this arrangement is obvious when one remembers that physical instruction in elementary schools must necessarily be undertaken chiefly by the ordinary teachers. Some of the local authorities have, however, appointed expert instructors as organisers and supervisors of physical training, with such good results that the Board of Education, in the recently issued Circular 976, and in the Medical Grant Regulations (Cd. 8473), has announced its intention of paying grants in aid of the salaries of organisers. The grant may be to the extent of one-half of the payments made. The duties and qualifications of organisers are set forth in the circular.

THE Board of Education Circular, No. 987, on "The Teaching of Building in Evening Technical Schools," embraces too wide a field for us to deal with it in detail. Generally, it outlines systematic courses of instruction in building subjects, commencing in junior technical schools and terminating in senior technical institutes. It will be appreciated by that section of the teaching profession concerned, in that it gives a definite and long-felt lead. For years past it has been recognised that mathematics, geometry, and building science form an essential part in the training of all those concerned with building, but hitherto these subjects have received but scant attention, and the institutes and schools that have included them in their curricula have not always realised the essential condition of success, viz. the need of definite correlation. This feature the Board emphasises in its memorandum. Attempts have been made in various institutes to provide training in mathematics and science for building students by admitting them to the courses in these subjects which form part of the general scheme of the institutes. The memorandum realises the weakness of this, and points out the necessity of the work being under the control of one head of department or teacher, who is not only capable of conducting the work, but familiar and in sympathy with the class of student for whom it is intended. For such a scheme to materialise satisfactorily, the future must provide training courses for building teachers, which, we hope, are not far distant. We note one apparent omission, viz. the subject of architecture. This is an essential part of building; in fact, architecture is building in its broadest sense. Owing to the war, evening technical instruction is practically at a standstill, and the memorandum is therefore issued at a time when reorganisation is not only possible, but probably already under consideration by all education authorities.

THE third conference organised by the Committee for the Development of Regional Survey in association with the Civic and Moral Education League will be held at Newbury on April 7th-14th, and it is hoped that a detailed study will be made of this town and region from as many points of view as possible. The results of these studies will be correlated to supplement a regional survey of the Newbury neighbourhood already in process of formation by the grammar school. The governors of St. Bartholomew's Grammar School, Newbury, have kindly invited the conference to meet in its buildings, and teachers, students, and others interested in the study of their own locality are invited to attend the conference. A small fee of 5s., calculated to cover the expenses of organisation, will be charged to each member of the conference. Members will be asked to find their own accommodation in the town, but a list of hotels, lodgings, etc., will be sent to inquirers by Miss E. E. Kemp, hon. local secretary, Kingsbridge Road, Newbury.

THE third annual report, 1915-16, of the Committee for Geography of the University of Oxford has been published. We note that it has been possible to

arrange for the satisfactory conduct of the whole work of the School of Geography without going beyond the ranks of old students for temporary help. The number of students working for the whole or great part of their time at geography throughout the year was twenty-three (six men and seventeen women). One of these students was preparing for the Civil Service examination, fourteen for the diploma, five for the certificate, and three were taking special courses. The students have prepared for the Royal Geographical Society indexes to some of the sheets of the new 1 : 1,000,000 map of Europe now being compiled for the War Office. Arrangements were made to give help in the instruction of the Serbian boys now in Oxford. The syllabus for the diploma and certificate has been revised and the rates of tuition fees for the former somewhat increased. The new regulations came into force last September.

A NEW list, No. 68, published by Messrs. A. Gallenkamp and Co., Ltd., gives an illustrated description of the electric laboratory furnaces this well-known firm is able to supply. The list shows a number of modifications of that to which we directed attention at the beginning of last year (vol. xviii., p. 29), and gives full particulars of a fresh pattern furnace designed to meet existing needs. Science masters would do well to obtain a copy of the new list by applying to 19-21 Sun Street, Finsbury Square, London, E.C.2.

THE Publishers' Circular for January 6th indicates that the high-water mark in the publication of books occurred in 1913, when more than 12,000 new books and new editions were published. In 1916 this total had dropped to just above 9,000, the relative decrease being greater in the case of new editions. In comparison with 1915, the totals for fiction, business, domestic arts, and geography show an increase for 1916; in science the output was almost halved. In education, i.e. in books dealing solely with educational theory and practice, the totals for 1915 and 1916 were 293 and 211 respectively.

THE University Correspondent for March states that Heidelberg University, and also many schools in Hamburg and other German cities, have been closed. By way of contrast it may be noted that Education for March 2nd announces that the Nottingham Education Committee has decided to reopen its evening schools, which had formerly been declared closed for the duration of the war.

THE issue of *School and Society* for January 13th contains the report of an American committee which has been investigating the teaching of geometry. Geometry should, the report states, precede algebra when it is used as a concrete basis for the study of all other branches of secondary-school mathematics. The logical phase of geometry should be a high-school study, and should be preceded by a systematic attempt to teach the simple concepts of geometry. All geometric development starts with observation, and along with observation the scientific language of geometry is to be taught. Drawing should be used to connect old and new 'ideas, and plane and solid geometry should be closely related. Hence models must be used

and by such means the ideas, but not the definitions, of symmetry, congruence, and similarity should be made familiar to the pupil. Arithmetic and then algebra will be increasingly used as the work proceeds, and attention will be concentrated upon the concept underlying the degree of accuracy to be obtained from the computation of measured quantities. Trigonometrical methods should replace geometric methods where a real advantage is involved. Such a course would extend over two or more years, and would commence in the elementary school.

"WHATEVER else the American schools and colleges may just now be doing, they are not insisting upon the merest rudiments of a liberal education." This criticism is launched in an editorial note of the *Educational Review* (U.S.A.) for February, which calls for a radical attempt to deal with the existing deficiencies of higher educational institutions. The editor is moved by the publication, by Prof. Franklin H. Giddings, of Columbia University, of a leaflet addressed to the post-graduate students of American colleges. The leaflet contains twenty-five suggestions upon the use of English directly provoked by outrages committed in doctors' dissertations in one university department in one year. The last suggestion is, perhaps, of greatest interest: "Don't believe that 'up-to-date' American school teachers, professors, and 'educators,' with occasional exceptions, know how to use the English language. They don't. If you want to learn to write well, ransack garrets and old book-shops for grammars and text-books of rhetoric that were published before 1875, and study them diligently." The leaflet is considered to be emphatic and convincing testimony that the bachelor's degree when conferred nowadays by an American college means little or nothing.

THE supplement to the *Educational Review* (Madras) for January contains the text of the presidential address to the All-India Mohammedan Educational Conference, held at Aligarh in December last. The Muslim community constitutes about one-fifth of the entire population of India, and Muslim students amount to about one-fifth of the school-going portion of the population which attends primary and secondary schools, but such students only number one-ninth of the entire body of students in universities. This Muslim backwardness in university education is, in a great measure, due to the comparative poverty of the Muslim middle classes, who are unable to bear the cost of college life on account of their limited means and their relatively higher standard of living. Scholarships are therefore a prime necessity for Muslims, and wealthy Muslims are exhorted to lead the way towards the provision of scholarships. On the night of *Shab-i-brat* alone a sum of 5 lakhs of rupees is wasted by Indian Mussulmans in fireworks every year; an organised effort should be made to transfer this money to scholarship funds. There are only six universities in working order in British India, while there are 134 in the United States and eighteen in the United Kingdom. India needs many more universities.

#### SCOTTISH.

THE arrangement between the Army Council and the Education Department whereby certain teachers were starred as indispensable has now come to an end, and all teachers in Class A, and those in Class B1 who are under the age of thirty-one, will now be called up for service. This will place a further heavy burden on the already gravely depleted teaching staff, but there is no doubt that those remaining will be able to "carry on," though with some lessening of efficiency. The contribution of the profession to the Army has indeed been notable, both in quantity and quality, and it is satisfactory to find the Army Council making due acknowledgment thereof. The latest recruits, it may safely be said, will worthily maintain the honour of their profession.

THE offer of the Church of Scotland to render national service in the schools has met with a chill reception, both from the general public and the teaching profession. For this the Church leaders have themselves to blame. In the original statement of their offer of service it appeared as if eligible teachers were to go to the front while eligible ministers were to take their places in the schools and draw their salaries. Vicarious sacrifice of this kind is common enough, but nowhere popular. It reminds one of a story that used to be told with great effect by the late Dr. Norman MacLeod against himself. A neighbouring minister received a call from one of the reverend doctor's elders, who begged him to visit a dying man. "But would it not be better," the clergyman said, "to send for your own minister? I am sure he would gladly go." "That he would," replied the visitor, "but, you see, the case is awfully smittle" (infectious). The elder, while unwilling to risk infection for his own beloved pastor, had no such compunctions in regard to a stranger. The case here, too, is "smittle" enough, and contact with it by deputy arouses no thrills. The storm of criticism with which the proposal of service was received has brought forth the explanation that there was no intention of replacing eligible teachers by eligible ministers. Only ministers above military age, or otherwise ineligible, would enter the schools. With such a scheme no objection can be found. Many ministers were formerly in the ranks of the teachers, and others in Sabbath schools. Both classes have gained valuable teaching experience that could be put to further use at this time.

THE Education Department's promised circular on grants in aid of war bonuses has just been issued. Its terms have practically all been anticipated by the recent statements made in Parliament by the Secretary for Scotland. In the case of teachers whose salaries do not exceed £110 per annum, the Treasury is prepared to pay half the bonus given up to a maximum of £5, and for those whose salaries exceed £110, but are not more than £160, half the bonus up to a maximum of £4 will be paid. The Department unfortunately has not been able to give effect to the teachers' petition that Treasury grants of £5 and £4 respectively should be paid to all teachers within the salary limits stated above who have not received any bonus from

their board. This concession would have brought in the whole body of voluntary teachers, whose managers have no funds at their disposal to pay even half the usual bonus. It is well known that the Department would gladly have given effect to this appeal had not legal obstacles intervened. The circular concludes by hoping that "managers, with the encouragement now given to them by the Treasury, will see their way to award bonuses such as in their judgment are reasonably adequate to the needs of the case." There is apparently no hope of this generous aspiration being realised, as even the most progressive boards have awarded sums that by no stretch of language can be termed "reasonably adequate," but the Department has it in its power to bring pressure to bear on those boards who refuse to award even the smallest bonus.

EDINBURGH teachers are in revolt at the condition attached by the School Board to the award of the war bonus. The circumstances are very similar to those against which London teachers recently protested. Teachers wishing the bonus have to make a confession of poverty. As a result of indignant protests this has been modified to requiring applicants to write to the convener of the Awards Committee stating the grounds on which they based their claim. This concession has in no way lessened the objections of the teachers, and at a crowded meeting it was unanimously agreed that no teacher should make an application. Pending a meeting of the board, it was resolved to delay further action.

INTIMATION has just been made that the Code of Regulations for day schools in Scotland during 1917-18 shall be the same as for last session, save that the reduction in the size of classes which has been postponed from year to year for the past half-dozen years is now postponed indefinitely.

MR. D. T. HOLMES, M.P., in the course of an address to Glasgow teachers on "Problems of Educational Reform," said that an essential reform was the creation of large administrative areas. Only in this way could teachers obtain security of tenure, adequate salaries, opportunities of promotion, and freedom from vexatious criticism. With larger administrative areas should be associated the formation of a National Advisory Council representative of every branch of education from the primary school to the university. One problem which could not be shirked was that of the voluntary schools. These schools, in equipment, staffing, and general conditions, were far behind the rate-aided institutions, and must be brought within the scope of the national system. He said that Sir John Struthers had his Education Bill ready, and the whole country would be surprised at the far-reaching character of its provisions.

#### IRISH.

THE Intermediate Board has apparently decided, in spite of many protests, to continue its new departure of a written examination for pass candidates in experimental science. This decision, involving as it does the setting of papers by examiners not in touch with

the work done in the school laboratories, is cordially approved by some educational authorities, but it is on the whole disapproved by a majority of intermediate schools and teachers. The grounds of this disapproval lie partly in the method of the introduction of the new rule, partly in the friction likely to be caused between the Intermediate Board, as a purely examining body in this subject, and the Department of Technical Instruction, which prescribes the course and the method of teaching, and supervises the work by regular inspection, and partly in the fact that a written examination *per se* is not an adequate test for experimental work.

THE Schoolmasters' Association, at a special meeting, has recorded its opinion definitely against extending the system of external written examinations for determining school grants; it points out that the extension of inspection in recent years has been accompanied by larger freedom in teaching, followed by good results; and it directs attention to the inherent defect of written examination by an external authority in the subject of experimental science as prescribed by the Department. This body has laid down in its programme four main objects in teaching it which have been accepted by the Intermediate Board, viz.:—(1) The education of the power of observation; (2) the training of the reasoning powers; (3) the training of the executive powers; and (4) the imparting of some of the more important of the principles and facts of physical science; and the association points out that only the fourth of these can be suitably made the subject of a written examination.

THE association further points out that a better way has already been urged upon the Intermediate Board, and supports the suggestion that the Department's officials should submit each intermediate candidate to a special individual test at an inspection held for that purpose towards the end of the school year. This suggestion seems worthy of a more careful consideration than the Intermediate Board has apparently given to it.

WHILE English education is on the point of being thoroughly overhauled and reformed by the new Minister of Education, Irish education, which needs a similar overhauling and reform even more than English, does not seem likely to receive any attention. Questions in the House of Commons have not elicited more than sympathetic replies from the Chief Secretary. While not denying that changes are necessary in Irish education, he maintains that owing to the difference between England and Ireland, and the need for compromise on matters of religious differences, it would be necessary to make very careful inquiry as a preliminary to any legislative project. He does not, however, even go so far as to suggest that these preliminary inquiries are being, or ought to be, made at present.

THE Department of Agriculture and Technical Instruction has issued a list with regulations of the summer courses of instruction for teachers which it proposes to hold this summer. The courses are open only to persons above twenty years of age, and except

in certain cases to teachers who are engaged by local committees of technical instruction, or in schools receiving grants directly from the Department or under the provisions of an approved local scheme of technical instruction. Teachers regularly attending the courses will receive £3 10s. towards maintenance, in addition to third-class return railway fare, if living twenty miles from the centre of instruction. The courses, except in rural science, will begin on July 3rd and end on July 27th. That in rural science will begin on August 7th and end on Friday, August 31st.

THE Department also announces that an art competition will be held in the Metropolitan School of Art, Kildare Street, Dublin, from June 18th to July 27th. The competition will be open to registered students of schools of art and art classes working in connection with the Department, and will be based upon the courses in art of the technical school examinations. There will be twenty subjects, in each of which a silver medal, with a prize of £2, and a bronze medal, with a prize of £1, will be awarded. Applications should be made to the Department for entry not later than May 15th.

A USEFUL little pamphlet entitled "Irish Civil Service and Students' Year- and Handbook" has been issued by the Sackville Press, containing particulars of appointments not only in the Civil Service, but also in banks, railways, insurance companies, municipal departments, etc. An interesting feature is the roll of honour, or list of Irish Civil Servants who have joined his Majesty's Forces during the war.

#### WELSH.

THERE is a strong demand from various quarters—including the Welsh County Schools Association—for the abolition of Latin as a compulsory subject at matriculation. It is claimed that the requirement involves at least an extra year's work at school, and that, especially in the case of science students, this time is wasted, and should in future be devoted to some subject more germane to the degree and to the life-work of the student. It seems, however, to be forgotten by many people that the student of science, however eminent in his own domain, who has no knowledge of languages is miserably one-sided and half-educated, even as is the arts student who has no knowledge of and no sympathy with science. We have already too many competent investigators who are wretched exponents; and whatever may be the material advantages of learning modern languages, including Welsh, the fact remains that Latin, with much that it inherits from Greek, is at the base of a large part of the vocabulary and of the stock of idioms possessed by nearly all the languages of Western Europe; it is also the most concise and unambiguous form of recording human thought yet devised.

A DEMAND which is far more in accordance with the true interests of education is one that is made alike by the County Schools Association in its resolutions sent to the Central Board and by the Incorporated Association of Assistant-masters in its evidence before the University Commission, namely, that there shall be full provision in the secondary schools for

work of post-matriculation standard, which shall be automatically recognised as exempting from the intermediate examinations of the University; the work is such that it can be better done under Sixth Form than under university conditions, and those who can get over it in their schooldays might take the degree examinations, though not the degree, near the middle of their residence, and then have an opportunity of doing research or other advanced work without the necessity of providing for the expense of an additional stay in the University. To this end the recognition of post-matriculation school work, when of satisfactory standard, would have to be taken out of the hands of individual professors.

THREE years ago someone addicted to the premature counting of chickens printed on the labels of the C.W.B. Examination books the words "Welsh National Council," and teachers have been looking to see the establishment of such a council as the first working model of a system of similar bodies, each associated with an already existing, or a future, university, and governing the affairs of an educational province; unfortunately there are Parliamentary undercurrents that threaten to wreck the scheme, unless quarrels and personal prejudices can be prevented from overriding its manifest advantages.

SPEAKING at a conference of Welsh societies at Tonypandy, Mr. Lewis, of Cymmer, said that as a schoolmaster he had great difficulty in teaching Welsh in the day schools because of the cosmopolitan character of the scholars. Councillor Huw Richards advocated the appointment of Welsh-speaking teachers only. It may be noted here that while many teachers who come into Wales from England take the trouble to get an acquaintance with, and in some cases a mastery of, the language, there are many of Welsh origin, whose English pronunciation marks them at once as Welsh, who yet consider the requirement that they should be able to teach Welsh as a nuisance. And it is reported that in an important school for girls all the pupils, more than 300 in number, take French, fifty-five take German, and eleven take Welsh.

CARDIFF continues to be an educational storm-centre, in spite of the fact that the Education Committee has a special sub-committee to deal with teachers' grievances. An elaborate inquiry is being held with regard to the conditions at the Boys' High School, where there have been many recent changes on the staff; and much annoyance has been caused by a circular asking teachers, including men of non-military age, as well as women, whether they are conscientious objectors to military service. This circular is resented as being of an inquisitorial nature, but it was stated in committee that there were rumours of teachers having inculcated disloyal sentiments in their classes. Teachers had been requested to volunteer for spare-time national service, in spite of the fact that the Director of National Service has made it plain that he requires no spare-time service, and no service from teachers. This intimation has, of course, since been withdrawn; since these notes were first drafted, information has come to hand that five teachers have been requested to resign for refusing to sign a declaration that they were not objectors to military service.

## THE GROWTH OF CHEMICAL SCIENCE.

*Chemical Discovery and Invention in the Twentieth Century.* By Sir William A. Tilden. xvi+487 pp. With 11 portraits and 150 illustrations. (Routledge.) 7s. 6d. net.

In this work on modern chemical discovery and invention the author has added a further useful contribution to the numerous scientific treatises and memoirs which have flowed from his experienced pen. The task of popularising chemical researches is one of great urgency, for it is even now, when the consciousness of the nation is awakened to the full by the emergencies of war, that the chemist must succeed, if he ever will, in arousing the British public to a recognition of the fundamental importance of chemistry as an essential agent in the ordered development of humanity in general and of our Empire in particular.

In few countries is the confusion attaching to the nature and scope of chemistry greater than in the United Kingdom, where the term "chemist" is popularly associated with another calling, that of pharmacy. This indiscrimination has actually been ratified by Act of Parliament (Pharmacy Act, 1868), which secures to members of the pharmaceutical body the exclusive right to the title "chemist and druggist" or "pharmaceutical chemist."

The early workers in chemistry had to be content with modest accommodation and scanty facilities for their researches, but with the rapid development of the science the tendency has been for increasingly expensive and complex equipment. A description is given of several typical modern laboratories erected both in the United Kingdom and in other countries. One of the most purposive of these modern laboratories is the Government Laboratory in Clement's Inn, and details are given of the apparatus employed therein and of the tests and analytical investigations carried out.

The wide range of chemical and physico-chemical inquiry may be gauged by the circumstance that modern equipment frequently includes electric furnaces producing temperatures exceeding 3,000° C. and refrigerating plants for liquid air which reduce the temperature to within 92° C. of absolute zero. Equally striking are the great variations required nowadays in experimental pressures. Vacuum pumps of the Geryk, Töpler, and Gaede types produce increasingly high vacua, in which the distillation is facilitated of chemical substances decomposed by boiling under atmospheric pressure.

In succeeding sections of the book the author develops and demonstrates the thesis that "where science has been respected and scientific knowledge cultivated, there has been industrial success; where it has been neglected industrial failure has been the consequence."

A summary is presented in non-technical language of the discoveries which laid the foundations of the principles of chemistry. The perennial speculations on the ultimate constitution of matter are rendered more fascinating, even if not less bewildering, by such recent researches as those of Lord Rayleigh and Sir William Ramsay on the inert gases of the atmosphere, of Sir J. J. Thomson on electric discharges through attenuated gases, and of Prof. Strutt on active nitrogen. These researches, carried out in England, synchronised with other surprising discoveries made in France by H. Becquerel and the Curies, which led to the identification and isolation of the remarkable element radium and other radioactive materials.

The section devoted to the topic of modern applications of chemistry includes chapters on the current manufacturing methods of isolating and utilising the gases—hydrogen, oxygen, and nitrogen—and the metals and their compounds. Among other important branches of applied chemistry we find instructive and illuminating chapters on petrol, coal-tar, dyes, drugs, perfumes, cellulose, and explosives. Special interest attaches to the section on rubber, for this material was undoubtedly first synthesised by the author in 1892, although this synthesis was long afterwards unjustifiably claimed as a German discovery by Duisberg at the New York meeting of the International Congress of Applied Chemistry in 1912.

The excellent portraits of eleven recent distinguished investigators lend a personal touch to the volume, and the 150 full-page illustrations render each chapter a useful object-lesson in some branch of pure or applied chemistry. The work should assist students, both young and old, in appreciating the national importance of cultivating to the utmost extent every field of chemical inquiry.

G. T. MORGAN.

## WEATHER LORE: OLD AND NEW.

*The Weather Map: An Introduction to Modern Meteorology.* By Sir Napier Shaw. Pp. 94. (The Meteorological Office.) 4d.

TEACHERS of geography are indebted to Sir Napier Shaw for this little book, which will show them the precise position of our knowledge with regard to the atmosphere, and will suggest to them some climatic hypotheses which they should reject, and others which they should modify, in so far as they attempt to explain climatic phenomena to their pupils. A glossary of meteorological terms is in preparation, and sufficient indication of its contents has been given to ensure it a warm welcome from the busy teacher.

The book itself is obviously a product of the war, since climatic summaries occupy twenty-five pages in order to present the main climatic facts with regard to the areas in which our Army is fighting; these summaries refer to conditions at Kew, Paris, Philippopolis (in the Balkan Peninsula), Babylon, Helwan (Egypt), and Dar-es-Salaam (East Africa). In this connection the author remarks that "in military operations, when it is often a question of now or never, or, indeed, whenever it is a matter of competition, rivalry, or antagonism, the influence of favourable or unfavourable weather is far too great to be disregarded. An expedition that is just within the airman's powers with a favourable wind is outside the range if the wind and its changes turn out to be adverse."

The weather wisdom of earlier days was largely empirical and individualistic—the sailor or the "Shepherd of Banbury" read the signs of the sky or marked the behaviour of the animals and birds, and drew his conclusions; the modern meteorologist interprets maps which are the result of organised effort by many individuals. The Daily Weather Reports of the Meteorological Office contain maps prepared to show the weather for four epochs in each twenty-four hours, and, in consequence, there are more than 50,000 weather maps of the British Isles available for study. No two of these maps are the same, and it is not expected that any map will ever be repeated; yet the maps range themselves more or less definitely under certain types, of which the most easily recognised are those arrangements of the isobars which indicate cyclones and anti-cyclones.

The weather expert of some years ago was condemned to an empirical investigation of the facts

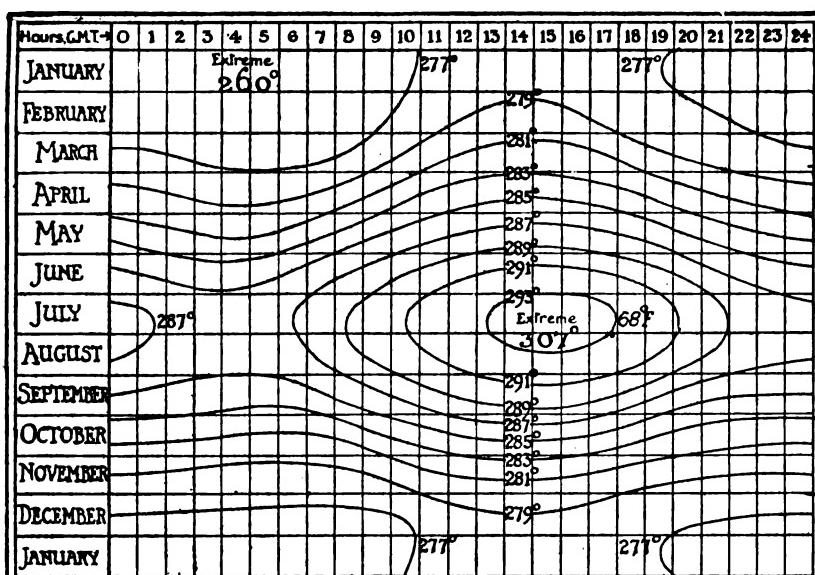
suggested by the various types of daily weather maps in order to discover some sequence of events or some frequency of recurrent types which would enable him to forecast the weather with a measure of success. The most important of these discoveries are given in this book. The fundamental law of modern meteorology is Buys Ballot's law: in the northern hemisphere, if you stand with your back to the wind, the pressure is lower on your left hand than on your right. In the southern hemisphere the lower pressure is on the right instead of the left, but within the tropics the law does not hold satisfactorily, and at the equator it does not hold at all. In applying this law the forecaster pays main attention to what is called barometric tendency, for it is observed that the travel of pressure changes is apparently more regular than the travel of pressure values. The sequences of change of wind direction, which are termed backing or veering, are extremely useful; for example, "cyclonic depressions may follow one another in succession, at intervals of two days or thereabouts, along their favourite track from W.S.W. to E.N.E., with the centre somewhere northward of Britain. When the centre has passed the wind is north-westerly; the air is to the left of the wind; the north-westerly gone by; higher pressure is to the right, south-west — to come. If the wind presently backs, as it is said, from N.W. (against clock hands) through W. to S.W. again, the

Hours.GMT.	0	1	2	3	4	5	6	7	8	9	10
JANUARY										Extreme 260°	
FEBRUARY											
MARCH											
APRIL											
MAY											
JUNE											
JULY							287°				
AUGUST											
SEPTEMBER											
OCTOBER											
NOVEMBER											
DECEMBER											
JANUARY											

Mean Temperature at KE  
Isopleths showing Season

The extremes recorded during the 40 years are

Extracted by permission of the C



Mean Temperature at KEWI for 40 Years, 1871-1910.  
Isopleths showing Seasonal and Diurnal Variation.

The extremes recorded during the 40 years are noted within the Maximum and Minimum curves.

(Reproduced by permission of the Controller of H.M. Stationery Office.)

But the meteorologist of earlier days resembled a diminutive deaf man passing rapidly round the outskirts of the crowd at a Trafalgar Square demonstration, trying to learn from the expressions on the faces of the people what the meeting was about and what effect the speakers were having on the people. Sir Aspler Shaw summarises the present state of our knowledge of the upper atmosphere, and points out that a knowledge of cyclonic sequences does not carry us very far, since the phenomena which are recorded on weather maps are, most probably, "controlled by the distribution of pressure at a height of about 30 miles," and that the wind eddies which we call "vortices" are the mere fringe phenomena of larger air movements at that altitude, fringe phenomena which may be affected by friction against the irregularities of the earth's surface.

An interesting diagram indicates the following facts: Above 10 kilometres ( $6\frac{1}{4}$  miles) there are no clouds; the average temperature in January is lower than  $-72^{\circ}$  F. ( $215^{\circ}$  A.), the lowest temperature recorded on the earth's surface, and, finally, temperature then ceases to fall; cirrus-clouds are at that height. At a height of two kilometres temperature is, on the average, below  $32^{\circ}$  F., and nimbus- and stratus-clouds (i.e. rain-bearing clouds) fly below this altitude.

(i.e. rain-bearing clouds) lie below this altitude. The atmosphere is still recognisable at a height of from 80 to 100 miles; from about 30 miles upwards it is supposed to consist mainly of hydrogen. Only the lowest layer up to 33,000 ft. (10 kilometres) is the region of the mixture, mainly of oxygen and nitrogen, in which the process of condensation and evaporation occurs, for above this height the presence of water-vapour in the air ceases to be appreciable.

The contents of this book have, perhaps, been sufficiently illustrated to send the reader to the book itself

to the book itself to discover its other treasures, but a word must be given to the fifteen climatic diagrams, one of which is reproduced on this page. The lines on the diagram are isopleths and serve to indicate the daily variations in temperature from month to month. It shows that the hottest period in each day is about 2 p.m., and the coldest about 3 a.m.; the hottest time of the year is about the third week in July, and the coldest about the corresponding week in January. During the

During the hottest period the night temperatures vary very slightly during two months. The daily range in late April is, on the average,  $11^{\circ}$  F. ( $279^{\circ}$ - $285^{\circ}$  A., i.e.  $43^{\circ}$ - $54^{\circ}$  F.); at the end of June the daily range is  $14^{\circ}$  F. ( $285^{\circ}$ - $293^{\circ}$  A., i.e.  $54^{\circ}$ - $68^{\circ}$  F.). At mid-December the average air temperature is roughly constant at  $39^{\circ}$  F. ( $277^{\circ}$  A.) from 8 p.m. to 8 a.m., and rises less than  $4^{\circ}$  F. by 2 p.m. The temperatures are given in Absolute degrees, on a scale at which  $273^{\circ}$  A. =  $0^{\circ}$  C. =  $32^{\circ}$  F., and  $373^{\circ}$  A. =  $100^{\circ}$  C. =  $212^{\circ}$  F. Climatic diagram No. 11 shows the isopleths for seasonal and diurnal rainfall at Kew, from which it is obvious that the heaviest rains are likely to occur at Kew during the month of July between noon and 4 p.m.; at Valencia (diagram No. 10) the heaviest rains are probable either in August about 5 a.m., or in December either between 3 and 8 in the morning, or between 6 and 11 in the evening. The official title of this publication is M.O. 225, i., and it may be obtained from the Meteorological Office, Exhibition Road, London, S.W.7

## THE TEACHERS' REGISTER.

*Official List of Registered Teachers, 1917.* Published under the authority of the Teachers' Registration Council by the Year-Book Press. 385 pp. 10s. 6d. net.

THREE years ago last January we published, under the above heading, an article intended partly to trace the course of events which had ultimately led to the establishment of the Teachers' Registration Council, but chiefly to celebrate the publication, which had just taken place amid a chorus of general approval, of the conditions of registration—the condensed results of many months of labour on the part of the council. During the interval which has elapsed since then, the council and its officers have been occupied in applying these conditions to individual cases, most of them, we should suppose, quite straightforward, but some of them requiring the exercise of a careful discretion. As a result, we are now able to celebrate—and we do so with the utmost satisfaction—the issue of the first Official List of Registered Teachers. To quote from the title-page, the list contains "the names and addresses of teachers who have fulfilled the conditions of registration prescribed by the council, together with the registration number and date of registration in each case. These particulars form part of the record contained in the official register of teachers maintained by the council under the Education (Administrative Provisions) Act of 1907 and the Registration Council Order in Council of February 29th, 1912." The published list contains no record of attainments, training in teaching, or experience. Such particulars are recorded on every registered teacher's certificate of registration, and can be ascertained therefrom, or, by a responsible person, from the secretary to the council. The scantiness of the information afforded by the published list was, we suppose, inevitable, but is unfortunate.

Besides the list of registered teachers, the volume contains a good deal of useful matter, including information as to the origin and constitution of the council, its officers and committees, the conditions of registration, and so on. We may add that the printing and binding reflect credit on the Year-Book Press, and are such as to make handling and consulting the book a pleasure.

The total number of teachers here registered is 17,628. Of these, about 1·3 per cent. are university teachers, 32·7 per cent. secondary-school teachers, 53·8 per cent. elementary-school teachers, and 12·2 per cent. specialist teachers. The percentage of registered private-school teachers is insignificant—a fact which by itself is enough to show that, eminently satisfactory as this list is, regarded as a beginning, it is only a beginning. The teachers who might have been presumed efficient have come forward in their thousands. The teachers concerning whom no guarantee exists have not come forward even in their tens. The publication of this list must therefore be regarded as a most necessary and important clearing of the ground for further action on the part of the State. Meanwhile, we hope that teachers will continue loyally to support the council in its effort towards creating a real teaching profession.

*Strategical War Map of Mesopotamia and Asia Minor.* Forty miles to an inch. (Philip.) 2s. 6d. net.—This sheet, 36 in. by 27 in., covers the area between the points Constantinople, Baku, Basrah, and Cairo. The map is coloured to show political divisions, and indicates fortresses, railways, and roads. It should prove useful.

## RECENT SCHOOL BOOKS AND APPARATUS.

## Modern Languages.

*Quatre Comédies.* Par Alfred de Musset. Edited by Raymond Weeks. xii+301 pp. (Oxford University Press, American Branch.) 3s. 6d. net.—The four comedies selected are: "Les Caprices de Marianne," "Barberine," "On ne saurait penser à tout," "Bertine," all of them delightful. The editor has supplied a short introduction, which is undistinguished style and not very illuminating for the student. It would have been better if less pains had been taken to quote the opinions of other writers on Musset. A very brief note is prefixed to each play, and there are four pages of notes to nearly 300 of text. It is not a very liberal allowance, nor are the notes written on any easily recognisable principle. It is thought necessary to give the translation of "occasion," "tant s'en faut," "prendre la mouche," b there is no note on, e.g., "Claudio est fait exprès" (p. 11), "flacon syracusain" (p. 13), "Sigisbe Patito" (p. 52). "Podestat" on p. 31 receives a note but the word had occurred on p. 22. It cannot be said that this book enhances Dr. Weeks's reputation.

*A Practical Introduction to French.* By L. H. Alexander. xxi+355 pp. (Oxford University Press, American Branch.) 5s. net.—This is a very well-printed book; the type is really excellent, and the proofs have been most carefully read. We may also say that its praise that grammar rules are well expressed, with the latest nomenclature approved in America. As regards method, the book is hopelessly antique. With scarcely any exceptions, the exercises consist of the translation of English sentences into French. There is no continuous French text in the whole of part i (150 pages). The treatment of the pronunciation is altogether inadequate. There appear to be no systematic selection and repetition of the vocabulary. If one were to judge from this book only, one might well ask: Has the reform method not yet reached the United States?

*A First French Prose Composition.* By F. W. Wilson and C. A. Jaccard. viii+121 pp. (Bell) 1s. 6d. net.—To those who, from conviction or to meet examination requirements, teach translation into French at a fairly early stage, this little book should prove interesting. It has been written on a rather novel plan. There are two parts: one containing English passages, the other containing French questions based on these, with a supply of words that may be utilised for answering them. The pupil reads through one of the English passages until he is familiar with it; then the subject-matter is handled in French by question and answer with the help of the material in the corresponding section of part ii., and then he translates the English text, where further help is supplied (e.g. as to the order of words, the tense, etc.). The direct-method teacher will, perhaps, remark that this means a great deal of preparation for a rather small amount of translation achieved, and that he prefers to delay translation until his pupils have acquired a more extensive French vocabulary. However that may be, the little book is a careful piece of work, and one is grateful for anything that shows a fresh treatment of the teaching of composition.

## Classics.

*Ancient Times: A History of the Early World.* By J. H. Breasted. xx+742 pp. (Ginn.) 6s. 6d. net.—Only last year we welcomed Mr. Breasted's "Short Ancient History" as a volume likely, both by its method of presentation and by its wealth of illustra-

tions, to capture the heart of any Sixth Form schoolboy. The present volume is in every way much fuller; not only is the narrative given with greater detail, but even greater use than before has been made of the appeal to the eye. There are eight beautiful-coloured plates and innumerable other illustrations and maps—in fact, full advantage has been taken of the aid which archaeology gives to the teacher of history. The young student who possesses this book will learn much of the art and general life of the ancients by merely turning over the pages; and there is everything in the book to encourage him to make a serious study of ancient history. For such a study he will find Mr. Beeston an excellent guide. We must congratulate the publishers upon having spared neither pains nor expense in producing such a "delenimentum" for the study of ancient history.

*Teaching High-School Latin.* By J. B. Game. vii+123 pp. (Cambridge University Press, for the University of Chicago Press.) 4s. net.—A disappointing book: much space is taken up with detailing the opinions of prominent American citizens upon the ideals and purposes "back of Latin teaching"; there are tables to show the number of pupils in America who learn Latin, and the number of Latin words in the English language, etc. There is one good thing in the book, in the recommendation to use simple Latin hymns and songs. On p. 71 we are told that "pupils do not need a knowledge of quantities until they reach Virgil!" They reach him on p. 92, and then need all their knowledge of quantities; first the teacher scans the lines, but soon the class can "repeat the scan of a few lines" and even "scan the day's lesson in concert." We can hear them doing it! There are ten lines on the direct method in the last chapter. Need we say more?

*Corinthians I., the First Epistle of Paul the Apostle to the Corinthians.* Edited by R. St. John Parry. xvii + 284 pp. (Cambridge University Press.) 4s. 6d. net.—The First Epistle to the Corinthians is so important that it is only right that this latest addition to the well-known "Cambridge Greek Testaments" should have been done by the general editor of the series. It must be a pleasure to all theological students that they now have an edition by an English scholar unworthy of the editions by German commentators which previously held the field. The peculiar nature of the epistle has led Dr. Parry to write very lengthy notes and excursions upon various difficulties, but the narration of much special matter to the appendix has rendered the commentary as a whole more *éminemment*, and therefore more convenient to use, than is often the case with such works.

### English.

*In English Pronouncing Dictionary, on Strictly Phonetic Principles.* By Daniel Jones. xxviii+419 pp. (ident.) 6s. net.—This is by no means the first pronouncing dictionary in the English language; ever since the spelling altogether ceased to be a guide to the pronunciation, the need of such books has been felt. This dictionary may, however, well claim a unique position, as it makes it possible to find what is the current pronunciation of all important English words (including proper names) as ascertained "on strictly phonetic principles." The form of English spoken is one common among educated speakers in England, and more particularly Southern England; it is the form of English usually taught to foreigners, and those who speak a dialectal variety of English and wish to modify it for the purpose of intercourse with those who do not share their dialect, consciously or

unconsciously adopt modifications which bring their speech into closer agreement with the form of English here represented. Mr. Jones is careful to avoid applying to it the expression "standard English," a wise precaution; he is primarily concerned with recording facts, and as he has done his work with all the care of a highly skilled phonetician, the scientific value of this dictionary is great and lasting. It may also serve as a basis for determining "standard speech," which is (in the opinion of many) a matter of some urgency. A study of the dictionary shows how much quite meaningless variety there is in the pronunciation of educated speakers; less, indeed, than there was one hundred years ago, but still far too much. It is no gain to a language to have two ways of pronouncing "either" or twenty ways of pronouncing "Rhodesia." Every phonetician will welcome the appearance of this great storehouse of facts; and its practical usefulness is such that it should find a place in every school library.

*The Bible in Spain.* By George Borrow. 600 pp. (Oxford University Press.) 1s. 6d.—The "Cambridge History" rightly tells us that only three of Borrow's books count, and "The Bible in Spain" is one of them. It is quite as alive as "Lavengro," and it lives all through. Real books are not so common as people think, and Borrow stands with Kinglake and Tolstoi in his power of writing them. Perhaps it would be possible to obtain from a definitely marked group of schools in which a good deal of reading is done some opinions on the reality of the works read according to the views of our younger critics. Probably Borrow would stand high.

### History.

*A Political and Social History of Modern Europe.* By Prof. C. J. H. Hayes. Vol. i., A.D. 1500-1815. xxvi+597 pp. 8s. 6d. net. Vol. ii., A.D. 1815-1915. ix+767 pp. 10s. net. (New York: The Macmillan Co.)—This large and important work deserves careful attention from English students of modern European history. It is written by an American scholar and teacher of repute, the associate professor of history in Columbia University. It is based on a wide reading of recent historical literature, and in some important sections upon a study of original sources. Its general plan is sound. The living present is regarded as the culminating point of interest. Hence the narrative, at first a mere sketch, increases in fullness and detail as it progresses, until for the nineteenth century it is exceptionally encyclopaedic. Another important and valuable feature is that throughout the whole work the two sides of history, viz. the political and the social, are closely co-ordinated. Special emphasis, indeed, is laid on the social side, for Prof. Hayes maintains the thesis that "the rise of the bourgeoisie is the great central theme of modern history," and accordingly he makes it "the great central theme of his book." He avoids that easily besetting sin of the ordinary economic historian, looseness of structure with inconsequence of narrative, by concentrating attention upon the political effects of social causes. His history is thus the record of the way in which the middle class secured political power, and the way in which they are losing it. It is highly instructive and useful to have this cultivated American survey of the evolution and evolutionary tendencies of the Old World.

*Sea Power.* By Archibald Hurd. 94 pp. (Constable.) 1s. net.—This is an interesting and well-written summary of British naval history. Its author, however, is an extreme representative of the blue-water school, and his judgments have to be accepted with caution. He is so ardent a disciple of Admiral Mahan that his sketch conveys the impression not only

that sea-power is important in history, but that nothing else is important. To say, for example, that "the power of the Norman kings rested in the main on their sea-power" is to lay prime stress on what was really a wholly minor factor in their greatness. Similarly, in respect of the present war, to say that it has revealed "the dominating influence which fleets exert over armies" is an exaggeration. It is obviously not the case in the Russian, Roumanian, and Armenian theatres of war, and in all the theatres military power is at least as important as naval. It is unfortunate that Mr. Hurd should have spoiled a good case by over-statement.

*History of Canada.* By W. L. Grant. xvi+411 pp. (Heinemann).—Three years ago Prof. W. L. Grant, of Queen's University, Canada, published in Toronto a history of the Dominion. It is that work, revised and partly re-written, which Mr. Heinemann now introduces to readers in the Mother-country. The book is welcome and timely, for interest in the British Dominions beyond the seas is keenly stirred at the present moment. Those who wish to have before them a short, well-written, copiously illustrated sketch of the whole course of Canadian history, from the original discovery of the country to 1911, may be confidently directed to this excellent and authoritative little volume. The chapters dealing with early exploration and discovery, wherein the splendid writings of Parkman are skilfully epitomised, are particularly attractive.

### Mathematics.

*Functions of a Complex Variable.* By T. M. MacRobert. xiv+298 pp. (Macmillan.) 12s. net.—Considering the dominant place which the theory of functions of a complex variable occupies in modern mathematics, it is somewhat remarkable that the treatises on this subject in English should be so few in number. No doubt this is a striking testimony to the excellence of these works; nevertheless, one has long felt that there was room for a text-book in which the ascent from the easier to the more difficult parts of the subject was performed in a more gradual manner, and which would make accessible to a wider range of students a knowledge of its leading principles and applications. We therefore give a most cordial welcome to Mr. MacRobert's work. In the first place, it devotes considerable space to a discussion of those elementary matters connected with complex numbers and the simpler functions which other works either ignore or dispose of in a few hurried pages. Another thing for which beginners will thank him is the very clear and detailed manner in which he works illustrative examples. The student who has carefully studied the first three chapters will have laid a solid foundation upon which he may with confidence, and, we may add, comparative ease, proceed to build his further knowledge. In the development of the theory the author has confined himself to the methods of Cauchy. Chaps. iv. to viii. are occupied with the establishment of the general properties of functions, and the remaining eight chapters contain discussions of gamma functions, elliptic functions, linear differential equations, and the principal functions defined by these equations. It is to be regretted that the author has not found room for a chapter on conformal representation. Such a matter as that of Schwarz's transformation is of so great importance in electrical and hydrodynamical theory that it is a pity it is omitted, and we hope it will find a place in the next edition of the book.

*The Geometrical Lectures of Isaac Barrow.* By J. M. Child. xiv+218 pp. (The Open Court Publishing Co.) 4s. 6d. net.—Men of science are often accused of indis-

ference to the humanities, and perhaps mathematicians more than almost any other class may be regarded as laying themselves open to this reproach, for they frequently have to plead ignorance regarding the men who have made important contributions to the science. For many the names of such men as Euler, Bernoulli or Taylor are merely labels attached to particular theorems. The name of Barrow is not perpetuated in this manner, although he deserves a conspicuous place in the mathematician's calendar, and we hope that Mr. Child's essay in historical research will stimulate interest in the human aspect of mathematics.

In the work before us we have a translation, with notes and proofs, of Barrow's geometrical lectures, and a discussion on the advance made therein on the work of his predecessors in the infinitesimal calculus. The usual facile opinion is that Newton and Leibniz were the co-originators of the calculus, but Mr. Child's conclusion, based upon his close study of Barrow's work, is that "Isaac Barrow was the first inventor of infinitesimal calculus; Newton got the main idea of it from Barrow by personal communication; and Leibniz also was in some measure indebted to Barrow's work for obtaining confirmation of his own original ideas, and suggestions for their further development, from a copy of Barrow's book that he purchased in 1673."

It will be seen from this extract that Mr. Child regards Barrow's part in originating the calculus as of considerably greater importance than has hitherto been considered to be the case. No doubt Barrow gave rules which are equivalent to the standard forms of differentiation and integration, and applies them to the rectification and quadrature of particular curves, but his work was cast in a purely geometrical form, and this was a hindrance to the development of the operational idea. The merit of Newton and Leibniz consists in perceiving that they were dealing with operations capable of being repeated on the same subject, and in inventing a suitable notation.

### Science and Technology.

*A Class Book of Chemistry.* Part iv., Metals. G. C. Donington. Pp. vii+402-528. (Macmillan.)—This, the concluding portion of the admirable text-book written by the late G. C. Donington, has been expanded from the material of chaps. xxxix.-xl. by Prof. Lowry and Dr. P. C. Austin. Mr. Donington had, like many of his fellow-teachers, tested the "research" method, and had discovered difficulties in it too serious to be overcome in our present educational environment, wherein not only must a boy learn something of scientific method and laboratory technique, but must have the mechanical *répertoire* of a grammar school in order to satisfy his "examiners, headmasters, and inspectors." In other words, the late author realised that he, like the rest of us, was responsible not directly for teaching chemistry, but very directly indeed for ensuring success at periodical tests.

Prof. Armstrong digged deeply and well when he laid the foundation of the heuristic method. He influenced chemical teaching (in schools at any rate) to a greater extent than any contemporary, but his fatal genius of the country for compromise has amalgamated the old didactic training of the last generation with the newer experimentalism. And with this peculiar result: that in a modern text-book even cheerfully didactic research by pointing out directly *what is going on* is the *result of the experimental investigation*.

In the volume under consideration Prof. Lowry and Dr. Austin fairly combine the descriptive chemistry with the metals with a reasonable amount of experimental work, which should give the pupil a first-hand knowledge of the preparation and properties of a number

of their derivatives. The reviewer has only one suggestion to make, and that is to utilise this knowledge in the drawing-up of a scheme for group analysis. His experience has shown that "test-tubing" is by no means the least valuable part of a boy's chemical training.

*Needlecraft in the School.* By Margaret Swanson. 12 pp. (Longmans.) 5s.—This book comes at a time when teachers are ready to welcome new ideas in the subject provided that they make for greater fluency. Miss Swanson divides her book into three sections: for the small child under twelve years, for a schoolgirl, and, lastly, for the older girl—possibly training-college student. She takes for granted the possibility of giving small boys some knowledge of needlework. Her short chapter on "Sex Differences in Experimental Work" shows that she does not propose to lead them along the same lines as the girls. In fact, she would do very little "leading" of any kind up to the age of twelve years. The work done by small children should be almost entirely spontaneous. The pages are full of suggestions, and personal experiences are revealed at every turn. It is for its suggestions rather than for its type of work that the book is to be studied. Local conditions must of necessity differ so enormously that an experienced teacher would wish to write a book for the teaching of needlework that should be regarded suitable for every type of school. There are many topics which would bear discussion and provide interesting subjects for debate, but on the whole the book may be commended to the careful attention of teachers of the subject.

*The Birds of Britain: their Distribution and Habits.* A. H. Evans. xii+275 pp. (Cambridge University Press.) 4s. net.—Though primarily intended for schools, this book should have a wider scope of usefulness, since it provides an account of British birds which is scientific in spirit and arrangement, and is at the same time free from unnecessary technicalities. An introductory chapter deals in a manner with such general subjects as migration and geographical distribution, and this is followed by a scheme of classification of orders and families adopted by the British Ornithologists' Union and carried on in subsequent sections of the book. Many other books classify birds according to seasons, etc., and so forth, and for young readers these books have obvious and sufficient advantages. Even so, however, soon loses its savour unless it is endowed with the salt of morphological ideas," and I think Mr. Evans has been wise, even in so far as a book, to arrange his material according to structural relationship and thus lay a firm foundation for future work. Without undue concession to those who merely demand entertainment from books on natural history, he succeeds in giving a thoroughly full account of the more significant details of habits and appearance. It is unfortunate that important aid to identification—particulars of size, etc., not given. The book contains more than ninety illustrations reproduced from photographs from Nature. In few exceptions these are clear and helpful.

#### Miscellaneous.

*Some Questions of Phonetic Theory. Part I.* By Dr. Perrett. vii+110 pp. (University of London Press.) 2s. 6d. net.—This is not a book for the beginner in phonetics, and, indeed, requires earnest study before its quite exceptional value is fully appreciated. It is a brilliant demonstration of what can be gleaned from skilful and painstaking observa-

tion, without the use of elaborate machinery, and we may hope that it will prove a starting-point for many kindred investigations. Dr. Perrett is a man of independent outlook, and he possesses a style of his own, far removed from didactic pomposity and dullness, and occasionally enlivened by playful sallies which now and then become most diverting. We look forward with eagerness to part ii., which is to be "An Essay towards the Abolition of Spelling," and is to present us with a "rectified" alphabet; and to the concluding third part, about which for the present Dr. Perrett leaves us in the dark. We may add that the four chapters of the present volume deal with "The Position of Rest," "Willis on Vowel Sounds," "The Wheatstone Test," and "The Compass of the Mouth," though not many of our readers will be much the wiser for this piece of information.

#### EDUCATIONAL BOOKS PUBLISHED DURING FEBRUARY, 1917.

(Compiled from information provided by the publishers.)

##### Modern Languages.

"Dictionary of Commercial Correspondence in Seven Languages." Parts i. and ii. 32 pp. per part. (Pitman.) 3d. per part.

##### Classics.

"Livy. Book XXIII." Edited by A. G. Peskett. (Pitt Press Series.) xxiv+160 pp. (Cambridge University Press.) 3s. net.

"A Greek Reader for Schools." Edited by C. E. Freeman and W. D. Lowe. iv+142 pp. (Clarendon Press.) 2s. 6d.

"Cæsar's Campaigns in Britain." Edited by T. Rice Holmes, with vocabulary compiled by G. G. Loane. 160 pp. (Clarendon Press.) 1s. 6d.

##### English: Grammar, Composition, Literature.

"English Grammar, Descriptive and Historical." By T. G. Tucker and R. S. Wallace. viii+176 pp. (Cambridge University Press.) 3s. net

The Granta Shakespeare: "Coriolanus." Edited by J. H. Lobban. xxx+212 pp. (Cambridge University Press.) 1s. net.

"Selections from the Writings of Sir Walter Raleigh." Edited by G. E. Hadow. 212 pp. (Clarendon Press.) 3s. 6d. net.

"Historical Passages for Précis Writing." By F. E. Robeson. 118 pp. (Clarendon Press.) 2s. net.

"Précis Writing. Being the above, with the same Author's 'Progressive Course of Précis Writing.'" By F. E. Robeson. 264 pp. (Clarendon Press.) 3s. 6d. net.

"Story-Telling, Questioning and Studying: Three School Arts." By Dr. H. H. Horne. 182 pp. (Macmillan.) 5s. 6d. net.

"English Grammar and Composition." Parts i., ii., and iii. in one vol. By G. A. Twentyman. 544 pp. (Rivington.) 5s.

##### History.

"Outlines of Medieval History." By C. W. Previté Orton. xii+586 pp. (Cambridge University Press.) 10s. 6d. net.

"A History of Modern Europe from the Middle of the Sixteenth Century." By John E. Morris. viii+282 pp. (Cambridge University Press.) 4s. net.

"A Notebook of Mediaeval History, A.D. 323-A.D. 453." By C. Raymond Beazley. viii+224 pp. (Clarendon Press.) 3s. net.

"A League of Nations." By H. N. Brailsford. 336 pp. (Headley.) 5s. net.

### Geography.

"Bengal, Bihar and Orissa, Sikkim." By L. S. S. O'Malley. (Provincial Geographies of India.) xii+318 pp. (Cambridge University Press.) 6s. net.

"Preliminary Geography." By A. J. Herbertson. Fifth edition, revised by O. J. R. Howarth. viii+152 pp. (Clarendon Press.) 1s. 6d.

"The Continents and their People." "Oceania: a Supplementary Geography." By J. F. Chamberlain. (Macmillan.) 3s.

### Mathematics.

"Practical Arithmetic and Mensuration." By F. M. Saxelby and C. H. Saxelby. viii+168 pp. (Longmans.) 2s. 6d.

"Mathematical Papers for Admission into the Royal Military College, September to November, 1916." Edited by R. M. Milne. (Macmillan.) 1s. net.

"Revision Papers in Arithmetic." By W. G. Borchart. 106 pp. (Rivington.) 2s. with Answers, and 1s. 6d. without Answers.

### Science and Technology.

"Elementary Cams." By F. de Furman. 90 pp. (Chapman and Hall.) 5s. 6d. net.

"Pocket Handbook of Minerals." By G. M. Butler. Second edition. 311 pp. (Chapman and Hall.) 12s. 6d. net.

"Water Supply from a Sanitary Standpoint." By W. P. Mason. Fourth edition. 328 pp. (Chapman and Hall.) 17s. net.

"Science in the School. Being Three Letters to the *Literary Supplement of the Times*." By Sir Clifford Allbutt. 20 pp. (Heffer.) 6d. net.

"A Text-book of Thermochemistry and Thermodynamics." By Prof. Otto Sackur. xvi+440 pp. (Macmillan.) 12s. net.

### Pedagogy.

"German and English Education." By Dr. Fr. De Hovre. 108 pp. (Constable.) 2s. 6d. net.

"Permanent Values in Education." By Kenneth Richmond, with Introduction by A. Clutton Brock. 136+xxiii pp. (Constable.) 2s. 6d. net.

### Miscellaneous.

"The School World." Vol. xviii. January to December, 1916. (Macmillan.) 7s. 6d. net.

"Macmillan's Official Copy-books." (Macmillan.) Increased in price from 2d. to 3d.

"The Ideal Catholic Readers." By a Sister of St. Joseph. Primer, 1s. 3d.; First Reader, 1s. 3d.; Second Reader, 1s. 6d.; Third Reader, 1s. 9d.; Fourth Reader, 2s.; Fifth Reader, 2s.; Sixth Reader, 2s. 6d. (Macmillan.)

"Vegeculture: How to Grow Vegetables, Salads, and Herbs in Town and Country." By Harry A. Day. 160 pp. (Methuen.) 1s. 6d. net.

"The Gospel according to St. Matthew." By Canon P. A. Micklem. 292 pp. (Methuen.) 12s. 6d. net.

"Pitman's Shorthand Drill Exercises." 64 pp. (Pitman.) 6d.

"The Business Man's Guide." By J. A. Slater. Seventh edition. 520 pp. (Pitman.) 3s. 6d. net.

"Shorthand and Business Training." Parts i. and ii. 20 pp. a part. (Pitman.) 2d. per part.

"The Official List of Registered Teachers, 1917." Issued under the authority of the Teachers' Registration Council. 388 pp. (Year Book Press.) 10s. 6d. net.

### CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising an article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

### The Words "Science" and "Philosophy."

A FEW weeks ago the proposal to institute in the University of Oxford the new degree of "Doctor Philosophy"—a proposal which has been accepted by Congregation—received the valuable support of Prof. Case in a letter published in the *Times*. He points out that we have in England a tendency to popularise technical terms so as to pervert their legitimate meaning, and he expresses lively regret at what he holds to be the use of the word "science" in an unjustifiable sense by Prof. Armstrong and by the high authority of the Ministry who appointed the "Royal Commission on Science." I quite agree with the President of Corpus that English carelessness about technical terms tends to sanction an arbitrary abuse of language, and has led to an improper use of the word "science," confining it to those branches of knowledge which are more correctly called "the natural sciences."

I say "more correctly" since, in the charter granted by King Charles II. to the founders of the Royal Society in 1663, that society is entitled "Regia Societas Londini pro scientia naturali promovenda." This was translated at the time into English as "The Royal Society of London for the Promotion of Natural Knowledge." In later times at both Oxford and Cambridge the term "Natural Science" has been with general approval substituted for "Natural Knowledge." On the other hand, there is early and weighty precedent for the use of the word "science," with further qualification, to signify the knowledge of Nature or "natural science." The "Académie des Sciences" was founded in Paris in 1666 with the limitation of the word "science" which has been consistently maintained. The "Académie Française," the "Académie des Inscriptions et Belles-Lettres," the "Académie des Beaux-Arts," and the "Académie des Sciences Morales et Politiques" (a recent addition) exist alongside of it as constituents of the "Institut de France." The use of the word "science," limited by the founders of the French "Académie des Sciences," has been largely followed by other national academies throughout the world, though the "Academia Regia Scientiarum" of Berlin—reconstituted 1812 as the "Akademie der Wissenschaften zu Berlin"—has four sections, namely, physical, mathematical, philosophical, and historical. It thus appears that the Royal Commission on Science of 1870 cannot justly be accused of audacity in its limitation of the word "science," as the President of Corpus would have us believe, since it was following the practice of the French and many other celebrated academies.

Moreover, the well-known fact that the word "science" was formerly applied at Oxford to the works of Aristotle scarcely justifies the contention of the President that the term "science" has been used "from Aristotle downwards" for the systematic and methodical study of a subject, nor indeed can the President wish to lead his readers to believe what his words imply, namely, that this Latin word was known and used by Aristotle!

Whenever it is possible, without pedantry, to use the term "natural science" in place of the abbreviative form "science," English writers no doubt should do so. But the French Academy, our newspapers, th-

Royal Commission, the term "scientific method," and the modern word "scientist" (which has the high approval of Whewell in his "Philosophy of the Inductive Sciences") have made it a difficult thing in practice.

The English-reading public understands by the word science," especially if printed with an initial capital, "natural science." A writer must not offend his readers by irrelevant scruples as to the correct use of words. We all submit to Art, with a capital initial, as meaning something quite different from "the art" of handicraft, and from that which is pointed to in the words "artful" and "crafty." We accept it as something other than "the arts," which are sometimes contrasted with "the sciences" and sometimes paired with them in couples. Bearing more closely on the present use of the word "science" is the use of the word "arts" to signify the subjects of the *studium generale* of the medieval university, since of these it is said: "The sciences are the arts of the mind."

The President of Corpus says, in his letter to the Times, that the mental and moral sciences are sometimes too narrowly called "philosophy." It is unfortunately true that this fine old word has acquired a misleading usage in modern English. There is no other justification for restricting it to what the pupils and editors of Aristotle called "metaphysics" than there is for excluding the study of mental phenomena from the application of the word "science." The founders of the Royal Society called the "natural knowledge" at which they aimed "the New Philosophy," and until the later years of last century "Natural Philosophy" and "Experimental Philosophy" were terms applied, at Oxford and elsewhere, with deliberate appreciation of their significance, to the study of physics. Whewell is an important authority for the wide and comprehensive use of the word "philosophy." The "wise men" of early times and the ancient Greek "philosophers" were, in intention, investigators and discoverers of the order of Nature.

The so-named "Philosophical Faculty" of the German universities includes the professors of the various natural sciences, as well as those of moral philosophy, history, language, and mathematics. On the other hand, it was under the theological domination of the Middle Ages that the conception of philosophy became restricted and restricted by the elaborate ingenuities of schoolmen, whose purpose was to harmonise Christian theology with the logic of "the philosopher," to which title they called Aristotle. A later use of the word "philosophy" has "harked back" to the Biblical example and tended to the narrowing of its signification in an undesirable way, so that many wrongly apply it at the present day to the studies of the "metaphysician" alone, whilst excluding from its scope those of the "physician" and the "physicist." The institution by the University of Oxford of the degree of doctor of philosophy to include more things in heaven and earth than are dreamt of by conventional philosophers will be a real progress in nomenclature and organisation.

March 14th.

E. RAY LANKESTER.

#### An Ethico-Liturgical Solution of some of our Educational Difficulties.

In a letter to this journal recently inserted through the courtesy of its editors I sketched a "solution" of the "religious difficulty in schools." An important part of that solution was a noble liturgy of Bible, story, music, and ceremonial, grouped around all the great world-ideas of science, art, etc.

In order to receive the benefit of the criticisms and suggestions of readers of THE SCHOOL WORLD, I here-with present the outlines of a liturgical unit for Heroines' Day. I venture to say that in the course

of it the pupils would imbibe a greater mass of noble ideas and noble words than in the course of the average very undignified lesson on "religion." I may say that certain repetitions are deliberate. No special apparatus is necessary, but the curtained platform could be used to more "dramatic" purpose than is here indicated.

#### SUGGESTIONS TOWARDS A LITURGICAL CELEBRATION OF HEROINES' DAY.

[M<sub>1</sub>=one school teacher.

M<sub>2</sub>=another.

M<sub>3</sub>=a third.]

M<sub>1</sub>. Let us hear the story of the Greek heroine, Antigone, who sacrificed her life in order to show sisterly love to her dead brother; and let us also hear the story of the Jewish heroine, Esther, who risked her life in order to save her nation from destruction.

M<sub>3</sub>. Behind the curtain the following passages are recited impressively while M<sub>2</sub> prepares to tell the story.

(a) Behold me, people of my native land:

I wend my latest way;  
I gaze upon the latest light of day  
That I shall ever see;  
Death, who lays all to rest, is leading me  
To Acheron's far strand  
Alive; to me no bridal hymns belong,  
For me no marriage song  
Has yet been sung; but Acheron instead  
Is it, whom I must wed.

(Pause.)

(b) Thou Grave, my bridal chamber! dwelling-place  
Hallowed in earth, the everlasting prison  
Whither I bend my steps, to join the band  
Of kindred, whose more numerous host already  
Persephone hath counted with the dead. . . .  
Polynices, in the tendance of thy body  
I meet with this reward! Yet to the wise  
It was no crime, that I did honour thee. . . .  
A brother is a branch that grows no more.

(In a somewhat different voice.)

(c) Go, gather together all the Jews that are present in Shushan, and fast ye for me, and neither eat nor drink three days, night or day: I also and my maidens will fast likewise; and so will I go in unto the king, which is not according to the law: and if I perish, I perish.

(d) How can I endure to see the evil that shall come unto my people? or how can I endure to see the destruction of my kindred?

M<sub>1</sub>. The story of Antigone.

M<sub>2</sub> tells the story. Certain passages, namely, those quoted above and certain others (see below), should be recited verbatim either by M<sub>2</sub> or (preferably) by M<sub>3</sub> behind the curtain, M<sub>1</sub> making a pause for their delivery. Thus a sharp distinction between M<sub>3</sub>'s familiar style and the more dignified style suitable for verbatim quotations will be established.

(ANTIGONE to ISMENE.)

(e) Be what seems right to you;  
Him will I bury. Death, so met, were honour;  
And for that capital crime of piety,  
Loving and loved, I will lie by his side.

(ANTIGONE to CREON.)

(f) It was not Zeus who ordered it,  
Nor Justice, dweller with the nether gods,  
Gave such a law to men; nor did I deem  
Your ordinance of so much binding force,

As that a mortal man could overbear  
The unchangeable, unwritten code of Heaven;  
This is not of to-day and yesterday,  
But lives for ever, having origin  
Whence no man knows.

(CREON to HÆMON.)

(g) Obedience is due  
To the state's officer in small and great,  
Just and unjust commandments. . . .  
There lives no greater fiend than Anarchy;  
She ruins States, turns houses out of doors,  
Breaks up in rout the embattled soldiery;  
While Discipline preserves the multitude  
Of the ordered host alive.

M<sub>1</sub>. The story of Esther.

M<sub>2</sub>. This may be either told by M<sub>1</sub>, or read by M<sub>1</sub>, verbatim; reading is preferable provided the biblical narrative be slightly re-arranged and considerably cut down. The fact that Haman was ignorant of Esther's nationality should be made clear. Vashti hardly comes into the story itself, yet some points connected with her are worth reading and discussion. In addition to passages (c) and (d)—to be read impressively again—the two (h) and (i) deserve good treatment.

(h) For this deed of the queen [Vashti] shall come abroad unto all women, so that they shall despise their husbands in their eyes, when it shall be reported, The king Ahasuerus commanded Vashti the queen to be brought in before him, but she came not.

(i) And the king said, What honour and dignity hath been done to Mordecai for this? Then said the king's servants that ministered unto him, There is nothing done for him. . . . And the king said . . . What shall be done unto the man whom the king delighteth to honour?

M<sub>2</sub>. Discourse notes.

Elucidate points in the above narratives. Refer to modern heroines—Joan of Arc, Grace Darling, etc.

M<sub>3</sub>. Repeat passages (b) and (d) and the concluding lines of (c).

F. H. HAYWARD.

87 Benthal Road, N.

#### Age of Retirement for Assistant-mistresses.

On behalf of the staff (nineteen members) of a secondary school, I wish to protest against an opinion expressed by Miss Burstall in an address to the Association of Assistant-mistresses, reported in THE SCHOOL WORLD of March, 1917.

Were Miss Burstall's suggestion carried out, that all assistant-mistresses of thirty-five who are not likely to obtain headships or posts of importance and dignity should give up teaching and become welfare workers or go into business, there would be, so far as girls' schools are concerned, no profession left. Headmistresses are usually unwilling to engage mistresses under twenty-four or twenty-five—indeed, teachers could scarcely finish their university course and training much before that age. It is too much to suppose that, even with training, a teacher at once becomes efficient. As a matter of fact, to good posts a headmistress rarely appoints one with fewer than three or four years' experience. There remain, then, six or eight years in which the teacher can practise an art acquired at a cost of much time and money. Like the baby in the famous epitaph, she may well ask:—

"If so soon I was to be done for,  
I wonder what I was begun for?"

Miss Burstall must have very little experience of the business world if she imagines that teachers or any other folk would be welcomed as beginners at

thirty-five. As for welfare work, if the education of the country were better, such work might, possibly, be rendered superfluous. Miss Burstall's suggestion would seem to be inspired by the example of the boys' public schools, which men avowedly enter until they can find more congenial work—most frequent in the Church. For men, teaching is scarcely a profession; Miss Burstall would, apparently, have the same good also for women.

Miss Burstall's experience as an assistant- and headmistress must have been exceptionally unfortunate. She has failed to find, among the older members of a staff, greater sympathy and greater skill as a result of age and experience. Surely, if only for the handing on of good traditions, all staffs require some older members to balance the occasional unwise and the love of novelty and innovation of the new recruit.

The work of a teacher, even of a humble assistant, if well done, should in itself confer importance and dignity on the person practising it:

"Who sweeps a room, as for Thy laws,  
Makes that and the action fine."

AN ASSISTANT-MISTRESS.

I MUCH regret that the writer of the above letter has wholly misunderstood my position by leaving out the words "as an assistant" after "a post of some position and dignity." This is the crux of the whole question. In the Manchester High School there are fifteen such posts out of a staff of forty, and the other twenty-five mistresses are almost all under thirty-five years of age. The writer has also ignored the suggestion about taking up outside work for a time only, and coming back to the school. Headmistresses and governors do not understand yet the value of such a plan. Let us hope that after the war they may.

I strongly resent the unwarranted assumption that I was ignorant of the excellent work done by older mistresses. In my own schooldays, and afterward in London, Manchester, America, and elsewhere, I have had definite experience to the contrary. It is because I have personal experience of the valuable work of so many older mistresses that I spoke as I did. A school, especially a school with traditions, must have these senior mistresses who give their whole lives to the school, and for whom pensions and occasional Sabbatical terms should be provided.

I have also known excellent work done by young women of twenty-one, fresh from college, under the direction of older colleagues. One need not be twenty-four or twenty-five before one is of any use in school.

I have also found that experienced and capable women teachers have been welcome in business and other posts, not only in the present stress, but before the war.

SARA A. BURSTALL.

## The School World.

A Monthly Magazine of Educational Work and Progress.

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# The School World

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MAY, 1917.

SIXPENCE.

## EDUCATIONAL RECONSTRUCTION.

By T. RAYMONT, M.A.

### I.

FOR a long time after the outbreak of war a gloomy view was taken in responsible quarters regarding the future of education in this country. We were told that whether we won or lost we should, like the rest of the belligerents, emerge from the war a poor people, certainly with no increased resources for such matters as education. That we shall be a relatively poor people admits of no reasonable doubt. But there are wise and foolish ways of meeting a misfortune of that kind, whether the misfortune happens to an individual or to a nation. If we are wise we shall learn to live harder, and yet to live in content; to give up luxuries which we had grown to regard as necessities; to give the go-by to what Mr. Julian Brock has called "expensive trash," in order that we may be able to meet with cheerful maintenance the extra demands of the grocer and the tax-gatherer. But (again if we are wise) we shall support with ungrudging hand the means, the only means, by which we may hope to recover, and more than recover, all that we shall have lost, except the precious young lives that nothing can bring back. The inveterate habit of our upper and middle classes of regarding popular education as a luxury has surely received its death-blow. The least intelligent and the most prejudiced among us are beginning to see something in the schemes of educational reconstruction that are rapidly being put forward. Mr. Fisher's task is formidable. But he has the satisfaction of knowing that, however great his demands may be, people who would have regarded him as a madman three years ago will not so regard him now.

There lie before me the report of the London Education Committee to the Council, the report of the Departmental Committee on

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Juvenile Education, the recommendations of the National Union of Teachers, and the programme of reform issued by the National Association of Head Teachers. To these may be added, as a pledge and earnest of things to come, the Board of Education's Draft of Proposed Revised Regulations for all that "Further Education" which lies outside the scope of the secondary school and the university. And the editors of THE SCHOOL WORLD have suggested that a connected view of some of the principal features of these documents may be of service. The field of possible comment is wide: one might start with the "nursery school" and end with the university. But there is no question that the educational problem of the hour is that of continuation classes, with all that they imply for the rest of the system; and it is to that subject that the greatest prominence will here be given.

### II.

First, however, let us deal briefly with the financial aspect of educational reform. For not only administrators, but also teachers, to whom THE SCHOOL WORLD makes its main appeal, should understand the broad features of educational finance, instead of thrusting the subject aside as common or unclean. In fact, some of the ceaseless friction between authorities and teachers might disappear if the latter looked into finance more closely, with the view of putting the blame on the right shoulders when blame there is. It is probable, for instance, that there is scarcely a teacher in London who could possibly live through a week without cordially reviling the authority under which he serves. To some extent he is, no doubt, justified, but he ought to know and to weigh the startling fact that whereas in the rest of the country only 49 per cent. of educational expenditure is locally defrayed, no less than 73 per cent. of the London burden is borne by the silent, patient London ratepayer. No

wonder, then, that the London Education Committee's report gives great prominence to finance, and no wonder that London insists on State grants *proportioned to approved expenditure* as the only equitable system. The following passage is worth quoting in full :—

We would point out that existing grants are stereotyped in so far as they are equally applicable to all areas, large or small, urban or rural, to London and Lancashire, to Tiverton and Rutland. But (at any rate, as regards higher education) they vary widely, both as to subjects or institutions, and as to the basis on which they are assessed. They vary in that they offer in some forms of education a much higher percentage of cost than in others; and they vary according to the estimate by the Board's inspectors of the value of work carried on under particular regulations. Both variations, applicable as they are to the country as a whole, are, we consider, educationally unsound. Under the first method local education authorities are induced to seek what pays best, and not what is most needed. Moreover, the variation of cost—teachers' salaries, materials, and so on—from locality to locality, together with the possible variation of organisation from that which meets minimum requirements, modifies, if it does not nullify, the object the Board has in view, viz. that of giving an additional stimulus to a particular kind of institution or subject. Under the other the task imposed on inspectors is too difficult, and the factors that determine the variation of grant are not known to them with precision. Further, the individual assessments are not intimated to the authority, and they cannot, therefore, be questioned, especially in a mass of work such as a large authority undertakes.

There are other objections to code and *ad hoc* grants. They tend to get out of date: they are opposed to elasticity of treatment. Variable grants and varying bases for different grants lead to many difficulties and inequalities. For example, in secondary schools the Board of Education pays £5 per head; in trade schools the Council receives £5 for boys, £7 for girls, and, in point of fact, a trade school in London, though quite a different institution from a trade school elsewhere, gets only the same grant from the Board, whatever the difference in the cost of the two types of schools.

Again, the Council only receives for its central schools the same grant which is paid in respect of ordinary schools to other authorities who confine their operations to the minimum.

In the field of technical education there are all kinds of regulations, and it is just in this branch of the work that there is considerable room for expansion and development. Similar observations apply to the elementary schools, where the grant varies, being 13*s. 4d.* for infants and 21*s. 4d.* for boys and girls.

We consider that payment of grants on approved expenditure is the only system which includes all the factors and which can be precisely stated. Disputable items will then be known; they are concrete, and they will lend themselves to precise treatment. The pay-

ment of a fixed proportion would, in our opinion, remove four grave defects in the existing system—

(i) The local education authorities would not be disturbed in choosing "forms of education" by attractiveness or unattractiveness of the grant offered.

(ii) The Treasury would cease to struggle over increased grants for new developments.

(iii) Parliament, in placing burdens on local education authorities, would know that they would have to find a fixed proportion of the cost.

(iv) It would meet the difficulty of variation of cost of the same service from area to area, and would afford increased assistance to authorities which maintained a high standard of efficiency.

No doubt there might be exceptional cases in which some form of adjusting or super-grant would be required. There should, however, be no difficulty in meeting the claims of those few heavily rated areas.

Under our proposals it would be necessary for a local authority to submit to the Board of Education a scheme setting out the whole scope of its proposed educational work, including elementary, continuation, secondary, technical, and university education. The scheme should be drawn up for a period of, say, three years, subject to modification, as in the case of the forty to forty-eight scheme, and to the same system of inspection by the Council's officers as at present. The scheme would deal only with local provision as to its efficiency; non-local schools would be excluded. The main requirements having been settled, the functions of the Board in respect of local supply and efficiency should, we consider, consist of (1) criticism and approval of any such scheme; (2) ascertaining whether on broad lines the scheme is working satisfactorily; (3) stimulating the laggard authorities. The Board of Education should deal with important matters of general policy and not with details of working. It should have power to reduce grants in case of failure to make or carry out an approved scheme, and finally, in the case of a laggard authority, the power to administer the local education of that area, including authority to raise the necessary rates.

The Board's approval of the scheme should carry with it the 50 per cent. grant on the whole of the approved expenditure involved.

A simple and concrete illustration of the above contention may be seen in the case of the training colleges for elementary-school teachers. The Board of Education pays a large capitation grant. It follows that a college authority is distinctly encouraged to find from other sources just enough to enable it to escape censure for inefficiency, and no more. A college authority which is afflicted with a sensitive educational conscience, and is determined to provide first-rate lecturers and first-rate equipment, or else close its doors, must somehow find more than this minimum; and if the college is not in a position to get it from the rate-payers it may be driven to the expedient of exacting high fees from the students. The

Board's grant is indeed liberal in the aggregate, but it is inequitably distributed. The only fair basis of award is, as the London Education Committee and the National Union of Teachers both contend, a definite proportion of approved expenditure.<sup>1</sup>

### III.

Leaving finance, and coming to education itself, we take first the question of continuation classes. The crying needs of the country in this regard are now a thrice-told tale. But nowhere has the tale been told so definitely and so authoritatively as by the Departmental Committee. On the basis of the census returns of 1911 and of figures collected by the Board of Education at about the same date, the committee endeavoured "to arrive at a statistical picture of juvenile education as it stood before the war." How dismal the picture is may be gathered from the following passage:—

The aggregate enrolment in public full-time day schools (elementary, secondary, and junior technical) reached its maximum of about 662,000 between twelve and thirteen, when it represented nearly 95 per cent. of the total juvenile population of that age. During this year about 30,000 dropped out, mainly under the half-time system. About 185,000 dropped out at fifteen, about 85,000 between thirteen and fourteen, and about 266,000 at fourteen. Only about 84,000, or 13 per cent. of the 650,000, are likely to have received any fragment of full-time education after the age of fifteen, and not more than 5 per cent. can have received this in secondary schools. Between fourteen and eighteen these small numbers rapidly dwindle. Even the nominal elementary-school age terminates at fifteen, and although secondary schools are supposed to keep their pupils at least until sixteen, they are really at their fullest between thirteen and fourteen. Even then they only get less than 6 per cent. of the juvenile population, and between seventeen and eighteen this proportion has fallen to less than 1 per cent. Practically, therefore, public education after the elementary-school leaving age is a part-time affair. And there is very little of it. In 1911-12 there were about 2,700,000 juveniles between fourteen and fifteen, and of these about 2,200,000, or 81.5 per cent., were enrolled neither in day schools nor in evening schools. The number who were being educated outside the purview of the Board of Education may be regarded at this stage as almost negligible. Here, then, are the two great causes of educational wastage; general disregard of the facilities offered by evening schools completes what early withdrawal from the day schools began. Statistics do not show the whole of the case, and in interpreting them two addi-

tional points must be borne in mind. One is that, quite apart from the question of half-time exemption, many children, during the later years of their day-school life, are employed outside school hours in ways and to an extent which seriously interfere with their educational progress. The other is that even the meagre amount of evening-school enrolment does not represent anything like the same amount of continuous instruction from thirteen or fourteen up to eighteen. Many children enter evening schools during the session after they leave the day school, and then disappear. Many come after an interval of years, and have to spend their time in re-learning what they had forgotten. Nor does an enrolment mean much. About 15 per cent. of the students enrolled in evening schools for 1911-12 failed to complete the absurdly small minimum of fourteen hours of attendance during the session, and the average hours of attendance were no more than about fifty.

Two facts stand out clearly. One is that the enormous number of exemptions has a disastrous effect upon the education of children under fourteen. The other is that the system of voluntary evening instruction for boys and girls who have left the elementary school has been tried and found hopelessly wanting. The instruction must, if it is to be more than a sham, be given in the day-time, and it must be made compulsory. The Departmental Committee's main proposals are quite emphatic:—

It is, we think, clear that there are two lines of advance which can be pushed forward concurrently. One is the strengthening of the existing system of compulsory full-time attendance at elementary schools, the other the bridging over of the period of adolescence by a new compulsory system of attendance at continuation classes. Early legislation is required:—

(a) To establish a uniform elementary-school leaving age of fourteen, which entails the abolition of all exemptions, total or partial, from compulsory attendance below that age.

(b) To require attendance for not fewer than eight hours a week, or 320 hours a year, at day continuation classes between the ages of fourteen and eighteen.

Nowhere has the effort to secure the success of evening classes been more strenuous and sustained than in London. Yet this is the best that the London Committee can say of them:—

During the past thirty years or more these have grown in scope, in importance, and in favour. They have not only done good work within their own objects, but they have had a wide influence on the whole educational system. They are, however, voluntary, and have not succeeded in attracting more than a small proportion (in London, 25 per cent.) of adolescents. Those who most need continued education and discipline stay away. Further, it is recognised that the existing evening schools make a large

<sup>1</sup> In the case of continuation, technical, and art courses, all that would be needed is to give definiteness to section (g) of paragraph 27 of the Statute Regulations. Shortcomings in connection with sections (a) to (f) will be visited with loss of grant.

demand on the health and will of the young workers who attend.

But though it is agreed on all hands that a boy must no longer be expected to work all day as an engineering apprentice, or in some equally trying occupation, and then to attend evening classes, yet for his moral and physical welfare some provision for the right use of his evening leisure must be continued. On this point the Departmental Committee has very wise counsel to offer :—

Evening schools, over and above their educational functions, have in the past done valuable service in keeping children off the streets. It would be a regrettable set-off against the educational advantages, if the transference of continuation classes to the daytime were to remove one of the few facilities available in crowded towns for a wise employment of the evening hours. We do not anticipate that the schools will, in fact, be derelict after dark. Evening classes will continue on a voluntary basis for students above the age of eighteen, and the education given in the earlier years will have failed in its objective if the number of these older students is not in a short time largely increased. But school buildings at least, perhaps in the main under voluntary supervision, should continue to be at the service of the juveniles, for whom the evening hours will in future be to a greater extent available as hours for wholesome recreation. In the summer, recreation should so far as possible be in the open air. The evenings will in future be longer, if the operation of the Daylight Saving Act, which we regard as one of the most beneficent by-products of the war, is continued in times of peace. There will be games, and gardening, and cadet training, and scout-craft. It is the winter which will demand resources other than the poor alternatives offered by the inclement streets, the gambling pitch under the railway arch, and the garish entertainments which appear to be all that the low-grade theatres and picture palaces care to provide. The continuation school, like the day school, ought to become a centre for the self-directed activities of its pupils, as well as for those imposed upon them, and its buildings should serve as a home for innumerable clubs, debates, study circles, concerts, and other forms of social gathering. In the evening, too, the serious instruction of the daytime may be supplemented by voluntary classes in recreative subjects for those who desire them. Moreover, since the continuation classes will require home-work, and since many homes are not adapted to home-work, it will be well that rooms should be open in which "home-work" may be done under responsible supervision.

Another defect of the evening schools has been that, through lack of time and force of circumstances, they have tended to regard the pupil far too much as the future clerk or mechanic, and far too little as the future citizen. The curriculum has been unduly restricted to the demands of a narrow trade ideal, neither teacher nor pupil having had

sufficient encouragement to look beyond the immediate necessities of the hour. This defect it is proposed to eliminate from the new continuation classes. The Departmental Committee, besides giving detailed suggestions for the curricula of day continuation classes, both in urban and in rural districts, reports general terms as follows :—

We need scarcely say that we do not regard the object of establishing continuation classes as being merely an industrial one. The industries stand benefit amply enough, both directly through the beginnings of technical instruction, and indirectly through the effect of education upon the character and general efficiency of those who come within influence. But we are clear that the business of the classes is to do what they can in making a reasonable human being and a citizen, and that, if they do this, they will help to make a competent workman also. Though this is wholly true, it is also true that education must be approached, especially at the adolescent stage, through the actual interests of the pupil, and that the actual interests of pupils who have just turned a corner in life and entered upon wage-earning employment are very largely the new interests which their employment has opened out to them.

Although, then, at any rate in the earlier years, continuation classes should give a general and not technical education, we think that they may with advantage from the very beginning have something of a vocational bias. . . . Between sixteen and eighteen a greater amount of specialisation will probably be introduced. A liberal basis is still essential, and the English teaching should now tend towards a deliberate stimulation of the sense of citizenship. For your persons engaged upon highly skilled work, however, technical subjects bearing upon that work will inevitably come to take a leading place in the curriculum, although even for them the civics and the humanities must by no means be excluded.

To much the same purpose the London Education Committee reports :—

Misgiving has been felt in some quarters as to the nature of the instruction that will be given in the continuation schools. Some fear that it may be exclusively of a trade or commercial character. I feel, however, that physical education and "humanities" will necessarily form part of the course, while that part which is more closely allied to the day's work would supplement and not merely replace the workshop or the counting-house. Further, it must be remembered that it is not the subject but its treatment that determines whether it is "humane" in character or merely utilitarian. Trade and commerce are services to humanity; and the craft or occupation can be used to create many interests that would widen the horizon, dignify labour, and make life something more than a "mere struggle for existence."

At the present time our evening schools occupy a subsidiary position in relation to the ordinary school education. The continuation schools of

future should be really a main feature of the young person's life. There are, of course, many difficulties of ways and means to be overcome in any system of compulsory continuation education—premises, teachers, employers, time off, the hours during which the education would be given, etc. These difficulties, however, must be faced.

One is cheered to find liberal views of the continuation-school curriculum not merely assented to, but strongly advocated, in all the schemes of reconstruction worthy of notice. The truth is, as the Departmental Committee says, that if the juvenile problem is to be solved, it must be by treating it as primarily a moral, and not an economic, issue. "Is the civilisation for which Englishmen have fought to be made a civilisation worth fighting for? We take comfort in the knowledge that those who will decide will be largely those who have fought."

But the Departmental Committee has not forgotten that a civilisation worth fighting for must be based upon a foundation of healthy nerve and muscle. In these days no maker of a curriculum is likely to forget that the pupil has a body, and it scarcely needed the inquiries incident to conscription to demonstrate the presence in our midst of shoals of weedy youths and pale-faced girls. The committee says:—

For all children, and throughout the period of compulsory attendance, we are convinced that physical training should be regarded as an indispensable element in the curriculum. The problem of adolescence is at least as much a physical as a mental one. The recent facts of recruiting have thrown a quieting light upon the physical condition of large sections of the population of this country, and we fully endorse the view expressed before us by Sir George Newman, that active measures should be taken to continue throughout adolescence the system of physical training and supervision which has already been initiated with such happy results in the elementary schools. It is perhaps in this respect that the inevitable early termination of the elementary-school life is most unfortunate. Whatever may be thought of the advantages and possibilities of continued schooling in the ordinary sense after the age of fourteen, there is not the slightest doubt that from a physical point of view the break in a child's life, when he leaves school, comes just at the moment when the disturbance of puberty brings him most in need of skilled and sympathetic direction. And this is also just the moment when he has to face the new strain of employment.

There is, indeed, no question as to the absurdity of ceasing to care for the child's physical welfare when he reaches his fourteenth year and really needs such care more than ever. But can we altogether pride ourselves on what we have done for him up to

the age of fourteen, great and valuable as that work has been in recent years? The deplorable half-time system still remains in many districts as a standing proof that we cannot so pride ourselves. The Departmental Committee, which has a way of measuring its words without mincing them, is quite clear on this point:—

We do not think it necessary to detail once more the arguments in favour of bringing to an end at the earliest possible date the present detestable system of half-time exemptions below the age of fourteen. They have been fully set out in the report of the Departmental Committee on Partial Exemption, and are now universally accepted, except in a few localities in which the system has become a habit, and in which its removal would entail some modification of familiar economic conditions. Our own investigations have been limited to an attempt to ascertain whether recent events have led to any material change of public sentiment in these areas. We do not find much reason to suppose that this is the case, but we are satisfied that, even within the textile industries, which are practically the only ones much affected, there is, and always has been, a strong body of opinion in favour of the change, and that, if it were once made, the necessary industrial reorganisation would not be a matter of serious difficulty. We regard it as imperative that it should be made at the earliest possible moment. Without this, no attempt to ameliorate juvenile conditions could carry with it a guarantee of good faith. There are at present about 20,000 half-timers in Lancashire, 11,000 in the West Riding of Yorkshire, and 4,000 distributed over other areas. Of these about 26,000 entered upon half-time employment at the age of twelve, and 9,000 at the age of thirteen. The special provisions for agricultural half-time have been made little use of, and would not be missed. It is much more important from a farming point of view, and is wholly reasonable, that school holidays should be so arranged as to set children free during the local seasons for harvesting operations.

At what age should compulsory education terminate? The London Committee, without arguing the point, places the limit at seventeen, but the National Union of Teachers and the National Association of Head Teachers say eighteen, and the Departmental Committee agrees with them:—

We must consider over how many years of a child's life the obligation to attend continuation classes is to extend. The Bill of 1911 did not propose to continue it beyond sixteen—that is to say, for more than two full years after the normal school-leaving age. The Consultative Committee suggested that compulsion should extend to seventeen, which is the age up to which boys and girls are regarded as juveniles for the purposes of the Labour Exchanges Act and the Choice of Employment Act. But we cannot feel that the period of maximum danger to health and character is over before eighteen, and we believe the value of

continuous discipline and physical supervision from the elementary school onwards to be undeniable. We therefore consider that compulsion should continue to eighteen.

#### IV.

Believing that the age of eighteen marks the proper limit of compulsion, the Departmental Committee has kept in view throughout its report a system which would keep the elementary-school leaving age at fourteen, and organise continuation schools in two divisions, the lower reaching from fourteen to sixteen and the upper from sixteen to eighteen. Unlike the National Association of Head Teachers, which would extend full-time education to fifteen, and ultimately to sixteen, and unlike the National Union of Teachers, which would give local authorities power to extend the period to fifteen or sixteen, with provision for partial exemption after the age of fourteen, the Departmental Committee would retain fourteen as the leaving age for the elementary school. The committee significantly remarks :—

One reason why we have not recommended that ordinary elementary schools should be organised to keep children up to the age of fifteen is the fact that many schools still require a good deal of reorganisation before they can be regarded as wholly satisfactory even for children between twelve and fourteen. We have even been conscious in the course of our inquiry that the almost universal desire for a leaving age of fourteen is somewhat qualified by the consciousness that all is not quite well with the upper forms of elementary schools. Some of the criticism which has reached us is probably based on ignorance as to what actually takes place in the schools, or on misunderstanding as to what the measurable results of education at the age of fourteen ought to be. Rightly or wrongly, however, the opinion is freely expressed that in many schools the upper standards are marking time; and if the critics are asked for a remedy, the suggestion is generally made that the educational methods are not practical enough. We feel little doubt that there is a considerable element of justice in such criticism. We do not take the demand for a more practical education to be a demand for a more directly vocational education. It is only a demand for a less bookish education. Education is a mental process, but the truth that for many children, especially those who will live by their hands, the best avenue to the mind is through the hands has not yet worked its complete revolution in the pedagogic methods of the nineteenth century. More manual instruction of various kinds is needed both for boys and girls in every type of school.

With the point of view taken in this passage the present writer has for many years been in hearty sympathy. Why is it that, notwithstanding

that the parent has received the benefits of education, both parent and child so commonly await with the utmost degree of impatience the dawn of the latter's fourteenth birthday—the day of his emancipation from the thraldom of school? The reason is not purely economic, for we need by no means go to the slums and the poorest districts for instances. The reason lies partly in the prevailing bookish education that is given during the last two years. One wonders why it has not occurred to any of the inquirers to consider seriously whether twelve is not a real epoch-making period in the life, and therefore in the education, of the child, and whether he ought not to be brought under the new régime with its new organisation and new teachers, at that age, first as a full-time and later as a part-time pupil. The opinion is gaining ground (in America as the result of careful and elaborate inquiry) that the minimum essential of elementary education, those which are necessary as a foundation for all else, can and should be imparted by the time the child has reached his twelfth year, and that thereafter a rather different kind of education, best given in a different school, is appropriate. Such an arrangement, by the way, would go far to solve the problem of women teachers in boys' schools. For no one doubts that from the age of about twelve onwards a boy should be much under the influence and supervision of a man and a girl under the influence and supervision of a woman.

#### V.

On the question of the supply and training of teachers, the National Union of Teachers and the London Education Committee are in substantial agreement. The recommendations of the National Union set forth the case clearly and simply. They run as follows :—

The Board of Education shall require local education authorities to provide a staff of teachers sufficient in number and qualifications to meet the requirements of the particular school, and shall further require them to increase steadily the percentage of certificated teachers on the staff of every school, with a view to every school being staffed as soon as possible by fully qualified teachers only.

Pupil teachers, student teachers, and supplementary teachers shall not count on the staff.

No certificated teacher shall be held, directly or indirectly, responsible for a class of more than forty children on the roll, and no uncertificated teacher shall be in charge of a class of more than thirty children on the roll. Where teachers are in charge of grouped classes, these figures, for such grouped classes, shall be reduced to thirty and twenty respectively.

In order to secure an adequate supply of su-

qualified teachers there must be great improvement in the following respects :—

(i) Salaries, pensions, and general conditions of the teacher's service.

(ii) Prospects of promotion to higher branches of the educational service.

Every scheme for the training of teachers shall provide for :—

(i) A course of higher education and some professional training before entering a training college.

(ii) A sufficient period of academic training, together with a course of training in the theory, history, and practice of teaching in a college forming a constituent part of a university.

(iii) The acquisition by every candidate of a university degree at the close of the training college course.

All this is excellent, except that persons who are in close touch with all the facts will not generally be disposed to share the confidence of the National Union and of the London Committee in the virtues, for the purpose in question, of the existing pass degrees granted by our universities. If (to take one example) the University of London granted an arts or a science degree with a pedagogic bias, just as it grants a science degree with an engineering or a commercial bias, much more might be said for the acquirement of a degree by the student who is being trained for elementary-school teaching. But as things are it would be a false step to require every student to aim at getting a degree. At the same time, *exerto crede*, nothing but good could result from bringing the training colleges into close relations with the universities.

## VI.

Much of the space allotted to this article has been devoted to the problem of continuation classes, because it is in that connection that something new has to be created—new curricula, new buildings, and a new branch of the teaching profession. When we enter the region of secondary and higher education we find ourselves in the midst of conditions that have largely been created during the past fifteen years. Nevertheless, secondary education needs serious consideration at the present juncture. Readers of THE SCHOOL WORLD have been kept well abreast of recent controversies as regards the place of science and of modern languages in the secondary-school curriculum, so that these questions need not here be entered on. But it is useless to provide model curricula for students who are not there to benefit by them, and the deplorable shortness of secondary-school life is a problem to be grappled with and solved. Here the report of the London Committee helps us to see the facts as they are :—

As regards secondary education, recent circulars and memoranda of the Board of Education have manifested the Board's desire to secure a larger number of students remaining to eighteen years of age in the secondary school, and the Board will no doubt endeavour to obtain such Parliamentary assistance as will enable local education authorities to make more provision in this respect. The shortness of the secondary-school life of pupils is at present a source of much waste of public money, particularly in the case of fee-payers. London stands out fairly well in this respect, but even here the results are unsatisfactory. It is suggested that a five years' life in a secondary school is the minimum that should be aimed at; and that a seven years' life is desirable. In London there are about 27,000 secondary-school pupils in public and semi-public institutions; about 2,500 only are above sixteen years of age at the beginning of any school year. Included in these figures are all maintained, aided, and non-aided institutions, such as the Girls' Public Day Schools and St. Paul's, Westminster, City of London School, Merchant Taylors', University College School, and Dulwich. These figures are far below similar figures before the war for France and Germany; they are below those for Scotland; and they indicate the strong effort necessary to bring English education level with that of these three countries.

We cannot adopt the adventitious means hitherto employed in Germany whereby a boy is excused part of his period of military training on account of time successfully spent in a secondary school. But we must find some other means.

## VII.

To descend from these high matters let us in conclusion attend to those small persons who stand at the threshold of school life. For many years our educational treatment of children of tender years has undoubtedly been a disgrace to our civilisation, and a sorrow to anyone who knows the life of a child in a sheltered and comfortable home. Because we knew that the school life of children of poor parents must abruptly end at some time between the ages of eleven and fourteen, we have been anxious to begin dosing them with the three R's at any time between the ages of three and five. Recently we have tended to eject the "under fives," not because we were convinced that they were being wrongly treated, but because we have not been able to afford room for them! The London Education Committee says :—

As regards children under five years of age, it is unnecessary for us at present to restate the problem. The present policy of the Council towards these children is to admit them to schools "where there is accommodation and the social circumstances demand it." In September, 1915, there were some 45,000 children

under five in the infant schools, and there may be to-day 30,000. In England there may be 200,000 to 300,000. It was part of the "forty and forty-eight" scheme to have regard to such children in determining the school accommodation required for certain districts.

Some kind of provision for under fives is necessary in certain districts—at all events, so long as present social conditions hold. As the physical and social conditions of children under five affect their education, we are giving careful consideration to the question of the best method of dealing with these children, and we have asked for further reports to be submitted to us on the matter. Meanwhile we desire to state that, in our opinion, the present elementary schools are not the best method of dealing with children from three to five.

And a very moderately expressed opinion, too! The further question might very well be raised whether after all we are wiser than other nations in placing the commencement of regular school life earlier than the age of six. Why be in so much hurry about the beginnings of formal instruction in reading and writing, when it is proposed to prolong the period of compulsory education? Perhaps there is something more than mere symmetry in the division—infancy to the age of six, in the home or the nursery school; six to twelve, devoted to elementary education properly so called, *i.e.* to learning the use of the tools necessary for further acquirement of any kind; and twelve to eighteen, spent in pursuing some form of later education, whether in the secondary school or in continuation classes.

#### REMINISCENCES OF THE SCHOOL-DAYS OF F. C. SELOUS AT RUGBY.<sup>1</sup>

By the REV. CANON WILSON, D.D.

I FIRST heard of Selous some time in 1863, soon after I became a housemaster. The master of his preparatory school at Tottenham told me that a Mr. Slous—for so the name was then spelt—was going to enter his son at my house. "Take my advice," was the gist of the letter, "and say your house is full; the boy will plague the life out of you." I wrote to inquire the nature of the plague. "He breaks every rule; he lets himself down out of a dormitory window to go birds'-nesting; he is constantly complained of by neighbours for trespassing; he fastened up an assistant-master in a cowshed into which he had chased the young villain early one summer morning; somehow the youngster

scrambled out, and fastened the door on the outside, so that the master missed morning school."

Such were his crimes; so, of course, I wrote back and said that he was the boy for me.

His father brought him down from town: a bright-eyed, fair-haired boy of twelve or thirteen, who had no suspicion that I knew all about his iniquities. When his father departed, I had a little of the usual talk with a new boy, about work and games and so on: and then I asked him what he meant to be. "I mean to be like Livingstone," he replied. I had seen Livingstone when he came to Cambridge—in 1857, I think—and spoke in the Senate House, appealing for a Universities Mission to Central Africa; so we talked Livingstone and Africa and natural history. I soon saw that he had the fire and the modesty of genius, and was a delightful creature.

He was quite exemplary as a young member of the house and school, so far as I knew. He was "late" for chapel sometimes in long summer afternoons; how much late I did not inquire. I guessed what he was about, and he did his lines like a man.

He was extraordinarily acute in all his senses—sight, hearing, smell, taste. He asked me, for example, one day to go with him to some brook a few miles away to watch kingfishers. We crawled up warily when we got near the spot. He could see exactly what they were catching and carrying, from a distance at which I could only see a bird flying. His power of hearing also was more than acute. One day at our table in hall I told a lady who sat next me that a nightingale had been heard singing in somebody's spinney. We decided to drive down to it after dinner, and on reaching the spot we found Selous already there, roaming about in the spinney. I called to him, and he came to the edge of the wood. "What are you doing there?" "Looking for a nightingale's nest, sir." "But why here?" "I heard you say at dinner that one was singing here." Now he was 16 or 18 ft. away, at a different table, and we were fifty in all, talking and clattering with knives and forks, and yet he heard me distinctly. He could disentangle the voices and listen to one, as a dog can follow one scent among many. Then as to smell and taste. He told me that when he shot a new bird with his "tweaker"—you will learn presently what the "tweaker" was in his case—he always tasted its flesh.

He was extremely accurate in his observation, and in his estimates of distance, size, number, etc.; in fact, he was the most truth-

<sup>1</sup> Published in the Jubilee number of the report of the Rugby School Natural History Society.

ful observer I can imagine, free from all exaggeration and egotism, and he retained this simplicity and accuracy and modesty all his life. He was a beautiful runner, a football player with singular dash, and a first-rate swimmer; but he left Rugby at seventeen, I think, so that he did not win any great athletic distinctions at school.

But I must tell you some stories about him.

On one great public occasion of rejoicing the streets of Rugby were decorated with flags. When my man called me at seven a.m., he said: "I think I ought to tell you, sir, that there is a broomstick and duster showing in every chimney in the house." "Very well," I replied, "go and tell Mr. Selous that they must be taken down by twelve o'clock." He had let himself down at night out of the dormitory window that looks into the study quadrangle and had collected brooms and dusters from the studies. He had somehow clambered up waterpipes and gutters and roofs, broomsticks and all; and when I went out people in the road were admiring our extemporised decorations—duster-flags and broom-handles sticking out of the chimney-pots at all angles. There was another flag, of the same nature, perilously near the top of the taller of two poplars that stood close to the boys' entrance. They were all taken down by dinner-time; I never inquired how, or by whom.

There used to be a vine, trained up the south face of the house, and one year—I think in 1868—it bore an extraordinary crop of grapes which ripened beautifully. One day at dinner I told the head of the dormitory on the second floor, over the drawing-room, that they might gather all that they could reach from the window. *I forgot Selous*, as this was not his bedroom; but the dormitory did not forget him. An aunt of mine was sleeping in the bedroom below, and she remarked next morning at breakfast that she heard, or thought she heard, voices at night quite close to her windows. Had anything happened? I went out into the garden to look, and the vine was stripped more than half-way down the windows of the first floor. It was Selous, of course; they let him down somehow. I was told that he filled a pillow-case with grape bunches and feasted the house. Mr. C. K. Francis, the well-known Metropolitan police magistrate, his contemporary in my house, has told this story of Selous to the readers of the *Daily Telegraph* (January 15th), and says that they let Selous down in a blanket.

Of course Selous was an active member of the school natural history society. I must tell you about a meeting of that society. Dr.

Walter Flight, who was in charge of the minerals at the British Museum, was staying with me, and I asked him whether he would like to come as a visitor to an ordinary meeting of our society. I knew it would be an interesting one. Selous had shortly before raided the heronry on the island at Coombe Abbey. He swam the pond from the end distant from the house, climbed several trees, took one egg from each nest, swam back, and was chased, but escaped by sheer speed. Lord Craven complained to the headmaster. The headmaster warned our society pretty plainly; and our committee censured Selous. At the meeting we were going to attend, Selous, as was widely known, was going to make his defence. The room, the old fifth form room, next to the school-house dining-hall, was crowded. Flight and I squeezed in. "Are your meetings always like this?" he asked. "You will see," I replied, "that the school takes a great interest in natural history." "I am very glad to see this," he said.

Exhibits were made, a paper read, and then began the real business of the evening—the official condemnation by our president, Mr. Kitchener, and Selous's spirited defence.

I may again supplement my memory of this incident by that of Mr. C. K. Francis. "One night," he writes in the *Daily Telegraph*, "about 11.30 he started to rob a hen-roost, which happened to be a heronry, some ten miles away, too far to walk, as time would not have allowed; so he determined to call in aid a certain master's pony, which no doubt he imagined had been secured for the night in its stable." (The pony was mine, I learn for the first time now!) "To get it out and set it in motion for the field of operations, through barred doors and bolted gates, was in itself no mean feat of enterprising daring; but this was nothing compared with the difficulties of getting the herons' eggs from the top of almost unclimbable fir trees, situated on an island (in a well-preserved park), to which he had to swim carrying his clothes in one hand above his head to keep them dry, the pony having been securely tethered where he could find it but the keepers could not. I can well remember seeing the herons' eggs on his return in the basket, which had been tied round his neck while swimming back."

Selous presented the eggs to the natural history society; and they were safe in the collection twenty years ago, I am told. I hope they are there still.

He also climbed the great elm trees, which then stood in the Close, for rooks' eggs. This feat was also performed at night; and the

cawing of the rooks roused Dr. Temple, but Selous was not detected in the darkness.

Selous's special contribution to our society was on birds. If I remember right, his first list of birds noted at Rugby exceeded ninety. I will tell the story how one very rare bird was added to our list. It was in the very hard winter of 1867; snow was lying on the ground. In the evening, some hours after lock-up, a ring at the front door came at the moment I was going to my study, the door of which was close to the front door. I opened the front door and there stood Selous, with a bird dangling from his hand. I don't know which of us was the more surprised. "Come into the study; what have you got there?" "Oh! sir, it's Williamson's duck; it's very rare." (I invent the name Williamson; I know it was somebody's duck.) "Go and fetch the bird-book from the house library." (I had put an excellent bird-book in several volumes into the library for his use.) "Leave the bird." I examined the bird, neatly shot through the neck. He came back and we identified the bird. He was quite right; a note in the book said that it had been occasionally seen at certain places on the East Coast; only once, I think, inland so far as Northamptonshire. "How did you get it?" "I saw it at Swift's and followed it to Lilbourne and got it there." "How?" "With my tweaker," was the reply. "It must be a very powerful tweaker," I said. "Yes, sir, it's a very strong one; I thought you would not mind my being late for once, as it's very rare."

When he got into the fifth form he was occasionally restive under the discipline of the house sixth, who were, perhaps, not very impressive, though virtuous. I remember on one occasion he and a very sturdy Australian, Forster by name, who were in a bedroom of which Fawcett, a gentle scholar, was head, had a little difference with him as to the use of candles to read by in bed after ten. As they would not put them out Fawcett kindly did it for them, and retired to his bed. A few minutes later Fawcett's bed was suddenly drawn out from the wall and put up on end, inverting poor Fawcett, who was buried in bedclothes and mattress. He extricated himself in the dark, lit a candle, and looked at Selous and Forster. Both were, of course, sound asleep. Fawcett made his bed; and next morning the house sixth met and took counsel. They were six in number. In the evening they called up Selous and Forster into the library before them all, and the head of the house announced that they were going to cane them both; no mere hand caning, but a good sound caning on the right

place. Selous and Forster put their backs against the wall, and said they would make an example of anyone who touched them. They would take a licking from me or Temple; but not from such fools as the sixth were.

The head of the house came to me for advice. I said he had better send them to me. They came; they pleaded guilty; but take a thrashing from those fools they would not. I said, of course, that it was a sixth-form matter; that it was unheard of that I should be their executioner; that Temple would give the same answer: they must submit or go. What would their fathers say when I wrote that their sons would not take a licking they had richly deserved? "Not from such fools as those fellows." A happy thought occurred to me. "Suppose you go back and say that I had persuaded you that a licking was the very thing you both wanted, and ask them to do it thoroughly, and thank them profusely when it is over." They took the humour, and improved on my idea. They went back with grave and long faces and said I had prayed with them and quite convinced them that a caning was what they wanted. So they bent over the table, and at each stroke said: "Thank you, thank you; it's doing me good, it's doing me good." The sixth let in, you may be sure; but they elicited nothing but gratitude.

Some six years later, when he came back from a four years' solitary travel and exploration in what is now Rhodesia, or even further inland, the incident of the tweaker again turned up. "I did wonder," he said, "whether you were such an innocent as really to believe it was a tweaker." "My dear Selous," I said, "I knew the bird was shot; and I knew you had a gun, and the farmhouse where you kept it, but you kep' it so dark and made such excellent use of it that I said nothing about it."

One of the most difficult problems presented to all who are in authority is: How much ought I *not* to know and see?

I think it was on this occasion that he came down to a house supper. He had told me lots of stories about his adventures in Africa during those four years. They are told in his books, every one of which is, I hope, in the school library and well read. I asked him to tell some of them to the house. No, he would not; so finally, at the supper, I said that if he would not, I would, and I began with the story of his going to ask Lobengula, king of the Matabele, for leave to shoot elephants. "You are only a boy," the king said. "You must shoot birds. The first elephant you hunt will kill you." Selous jumped up. "Oh! sir, let

me tell it," and we had a never-to-be-forgotten evening.

But it is time to stop. One of his friends, Sir Ralph Williams, well said of him in a letter to the *Times* of January 10th : "The name of Fred Selous stands for all that is straightest and best in South African story"; and I will venture to say that it stands for the same in Rugby annals.

### THE CARE OF THE EYES OF SCHOOL CHILDREN.

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#### III.

In this article I purpose dealing with three conditions of great interest and importance, particularly in their relation to the education of the child. The three conditions are squint, short-sight, and word-blindness.

#### SQUINT.

The eyes of man have come under a perfection of control by the brain, the like of which is found in no other animal. The two eyes of man work together almost as one, and this perfection of working gives man that sense of binocular vision which enables him to be the cunning workman that he is.

The frequency with which squint is seen amongst children can best be judged by the examination of the return of my children's hospital. Of 1,400 children examined for bad focus, 199 were suffering from squint; indeed, all the very small children were squinters. The following gives the percentages of squinters in the crowd of children with bad focus :—

Age	4	5	6	7	8	9	10	11	12	13	14
per cent.	100	100	63·2	32	7·6	17·7	5·5	5·2	7·5	2·7	5·4

From this return it will be seen that squint comes on very early in life. The increases in the years 9, 12, and 14 may excite some inquiry, and it may be taken that these increases are due to the periods in school life at which there were routine medical inspections; the last may be due to the desire of the parents to get rid of the squint before the child goes to work.

Why should there be a wish to get rid of the squint before going to work? Squint is ugly, no one will deny. More, there remains a lingering feeling that the inturned eye, the one that does not look at you, is a sort of "evil eye." Maybe many of the old witches who were done to death in "the good old times" were no worse than cross-eyed. The common people call it "bossing." It is a very old word;

it had an evil significance: of persons it indicated a despicable and worthless character, usually of decrepit age. "I speak to you, auld Bossis of perdition" (Lyndsay, "Works," ed. 1593). The defect itself was thought to be the work of evil spirits. In "King Lear" we find, in the scene on the heath at night : "This is the foul fiend Flibbertigibbet . . . he gives the web and the pin, squints the eye, and makes the hare-lip; mildews the white wheat, and hurts the poor creature of earth." Squint is undeniably ugly, and it is suspect by the common people still.

In its essence squint is a reversion to a lower order. Instead of the "eyes right" of the normal man, there is an irregular fixation such as is normal to animals. Single-eyed vision is the normal state of the vast majority of the animal kingdom. The lack of association of the two eyes is complete in all those in which the eyes are lateral, one on each side of the head. The independence is manifest to the most casual observer of the chameleon: one eye of the little creature will be asleep, the other very watchful; one may look backwards, whilst the other is directed forwards. With the advance in organisation, in brain development, and in cunning, there has been an increase in the control of the eyes. The eyes are better controlled in the hunting animals than in the hunted; better in the animals that hunt singly than in those that hunt in packs; and the full growth is found only in man—"a mighty hunter before the Lord."

Binocular vision comes into action very soon after birth. There is an interesting observation on this point noted in Pepys's "Diary." He writes : "At supper the three doctors of physic again in my cabin, when I put Dr. Scarborough in mind of what I heard him say: that children do, in every day's experience, look several ways with both eyes, till custom teaches them otherwise, and that we do now see but with one eye, our eyes looking in parallel lines."

The two eyes, the nerves and muscles, and the controlling brain may be likened to a four-in-hand. The driver is the brain, the reins and traces are the nerves and muscles, and the eyes are the horses. You may have the best of horses and equipment, but without a good driver the turn-out will not run straight. But if the driver be good, an indifferent team may be made to work well and pull straight, albeit the driver will get more than ordinarily tired with his work. That sets out the conditions of squint and the eye-strain preceding it to a nicety. No child who has perfect brain control of the eyes will squint, not even when the focus of the eyes is bad, or when the two are so different that it seems well-nigh impossible to

get them to work together. But the brain will compel the seemingly impossible, albeit there will be headaches and eye-strain of severe order. Another child may have very good eyes, but in the absence of brain control the eyes will squint. There are all grades between these two extremes; and there are variations in the brain control with variations in the health of the child. An attack of fever reduces the power of control, just as it reduces that over the movements of the limbs. We stagger when we are ill; so do our eyes. The drunken man loses the use of his limbs; so he does of his eyes: he sees two lamp-posts and can negotiate neither.

The urgency of medical treatment of squint lies in the fact that the squinting eye goes to sleep, it ceases to see effectively, and with disuse may go blind. If this were not so, objects would be doubled, and the life of the child endangered. The loss of an eye is serious. Therefore the squinting child must be put under medical control without delay. The treatment is long. The use of spectacles, the training of the sleepy eye, and possibly operation, are involved; but they are all worth the saving of an eye.

#### SHORT-SIGHT.

Short-sight, or myopia, is the reverse of flat eye. But there is a further difference: Flat eye is born, not made; whereas short-sight is made, not born. The eye of the young child is soft, its coats are likely to yield under strain. The yielding takes effect at the back of the eye, and the stretched and torn coats of the eye can be seen by the surgeon, just like the split seams of a black kid glove. When once this change has taken place the damage is done and cannot be remedied; only its effect upon the sight can be countered by the use of glasses. Short-sight is a definite handicap in the race of life; it is enough to state that no candidate for the Navy can succeed if he be short-sighted. No matter how well glasses may improve vision, a seaman with glasses is inadmissible. To the ordinary civilian glasses matter little, except that they are a nuisance. But this is not all. Short-sight is a progressive condition: when it starts it goes on, the eye continues to stretch, and the short-sight increases. It is indeed a disease state, and as such should be checked. Glasses alone will not check it; there must be a change in the methods of school work.

How important the effects of school life are in the production of short-sight may be judged from the following returns taken from my children's hospital. Sixty-eight per cent. had flat eye, 32 per cent. myopia. These defective children represented about 10 per cent. of the

school children, so myopia exists in about 3 per cent. of all the children. But the 3 per cent. is not evenly spread throughout the schools. Cases are rare amongst the infants and increasingly common with the older children:—

Age in years	4	5	6	7	8	9	10	11	12	13	14
Myopia, per cent.	6	2	8	12	20	24	33	40	49	52	65

Such a return is more emphatic than many words; there can be no doubt of the influence of the school. It is true that there is an hereditary tendency in myopia, but it is probable that myopia itself is not inherited, only the liability to it when the conditions tend that way.

It may be asked: What tendencies can be said to favour the onset of myopia? Comparison of the focus of flat eyes and of myopic eyes shows that there is a higher percentage of astigmatism amongst the short-sighted than the flat-eyed. Further, when the various grades of defective focus of children are plotted for each year of school life it is found that cases of flat eye and astigmatism are numerous amongst the young, but fewer amongst the older children; whereas astigmatism and myopia are increasingly common as we pass from the younger to the older children. The deduction is that astigmatic eyes tend to stretch under the strain and become myopic.

What is this strain that sets up the stretching? That is a matter of controversy. But it may be taken that close work, especially in the stooping posture, causes a greater strain on the eyes than any other usage. That position is altogether too common in our schools—in reading, in writing, and most of all in sewing. Check that habit. Have perfect illumination, large print, big handwriting; abolish sewing for the small children and only allow it for short periods for the older; and many of the evils of school usage on the eyes will be stopped. Above all, inculcate good habits: upright sitting; reading from books propped up in front of the child; upright handwriting instead of a crouch inducing obliquity; and most of all plenty of outdoor games instead of the vicious habit of story-book reading. Games promote the health and wits of the child, whereas story-books damage the eyes and addle the brains by a perpetual superheated atmosphere of excitement.

The short-sighted boy becomes a round-shouldered smug, a book-reading recluse, just because the pleasure of games has gone with the power to see clearly and smartly. The girl who is so clever and neat with her needle is likely to be similarly afflicted, and her cleverness may be but the demonstration of her injured sight.

## WORD-BLINDNESS.

Word-blindness is a very curious defect of the visual apparatus. The eyes themselves are not at fault; they see well enough. The fault lies with the brain; that part of the brain which converts the things seen into the things understood is defective.

Bad cases of this trouble are not common. But lesser ones are probably much more frequent than is supposed. Children with this defect see pictures correctly; they can see and tell the names and meanings of figures. But the letters of the alphabet when strung together to form words present an insuperable difficulty to them. They see, but cannot read. Our Western mode of reading is complex, very different from that of the Chinese. Their written language is a sign-writing, each idea having its appropriate sign. So many are these signs that it is the task of a lifetime to learn them and be able to read the Chinese classics. A typewriter is useless to a Chinaman—with the few signs of the keyboard of a machine he would be limited to the few words of an infant of three. Our Western mode entails a very few signs, that mean nothing and picture nothing alone, but through their combinations the trained mind perceives meanings and pictures innumerable. The word-blind child lacks that necessary connection in the brain that groups a number of signs into a single word and an idea. It can read figures, for each figure stands for something; it sees pictures, for they mean what they show. The picture of a cat shows a cat; to us the word "cat" suggests a cat, but to the word-blind child it is nothing.

According to the intelligence of the teacher, so will be the guess at the condition of the child. A dull teacher will scold the stupidity of the child: in my young days the cane would have been the appropriate cure! The better teacher will think the eyes are at fault and that the child cannot see. The best teacher will note that it can see figures and read them, and judge that the defect is more than ordinary.

I have little doubt that the host of bad spellers belong to this order of mind. The association factors of the brain are weak; such children do not see the words in the "mind's eye"; they try to spell by some misjudged "phonetic" systems that children are taught nowadays, and since English is utterly unphonetic, the result is chaos. Teach the children words as words; let them "look and say," and even the worst of the word-blind will learn to read; let the word be a symbol, teach as though the word were an ideograph, as is the Chinese script. There was this sense in the

spelling tasks of our boyhood: we learned the look of the word.

Word-blindness fitly ends these articles. It points the moral of school hygiene and its effect on training. Cast out the demon of ignorance in the presiding genius of the school and the children will be trained—but "this kind goeth not out but by prayer and fasting."

SCHOOL CHEMISTRY WITH A TECHNICAL BIAS.<sup>1</sup>

By WILLIAM J. GALE, B.Sc.

King's College School, Wimbledon Common.

SOME apology is needed for the use of the word "bias" in the title of this article: a concession to brevity at the expense of explicitness. It is not suggested that we should make any radical revolution in the teaching of school science in favour of technical instruction, nor even that we should add one more to the already numerous biases that this association has been asked to give the teaching of science during recent years. Most of us by now will be prepared to admit that the business of the school in respect to science teaching is to give a good general introduction to the essential principles of the subject and leave specialising to colleges and technical institutes.

But as part of a good general introduction there should surely be included references, on appropriate occasions, to the great considerations and problems involved in the application of scientific principles on an industrial scale. Much has been said and written of late years concerning the relationship between academic and applied science, and it has been only too clearly demonstrated that the industrial development of this country is hampered by the great gulf that is fixed between these. On this subject both manufacturers and university professors have received their measure of recrimination, but little or no regard has been paid to the schools which are responsible for the embryonic period of both.

Quite recently Mr. J. Swinburne, lecturing on the subject of "Science and Industry," made some references to the schoolmaster, and provoked considerable merriment by comparing him with a shunting engine that always "went to and fro." This may have been intended as a compliment, as a shunting engine is essentially designed to put things on the right lines, and if we only do this we shall have done enough. We shall be doing this if we indicate to those receiving instruction in science some of the problems that have to be faced in the

<sup>1</sup> A paper read before the Association of Public-School Science Masters on January 4th, 1917.

application of the science they are studying to industrial operations, and also the advantages to be obtained from the close co-operation of the men who make science with the men who apply it. Thus, by starting at the foundation of things, we shall encourage that *rapprochement* between pure and applied science that is so desirable for the future welfare of our industrial concerns.

Proceeding from general considerations to practical applications, we may take chemistry as a branch of science that is peculiarly suitable for the introduction of a few of the great technical problems that play little or no part in the subject as taught in schools. A few examples, by no means exhaustive, may be quoted in illustration of the manner of introducing such principles.

First, we may take the question of Cost. Scarcely any account is taken, in our school chemistry, of the cost of materials, yet this is the dominant consideration in technical chemistry. The late Sir William Ramsay held that more progress would be made in the teaching of chemistry if the teachers of this subject could only be induced to pay more attention to the problem of cost. This, then, is a consideration that should be introduced quite early into a chemistry course, and it can be done without making exorbitant demands on the knowledge of the form. As an example, we may assume that at an early stage in most school chemistry courses the constitution of the air, the preparation of oxygen, and kindred topics have been studied. It matters not for our purpose whether the facts and conclusions have been evolved heuristically, inductively, historically, or by "brutal suasion." Most boys will have had opportunities of studying the action of heat on such substances as mercuric oxide, potassium chlorate, etc. Oxygen is a substance in great demand, and we may now consider the problem of making it in larger quantities than we have been doing. A simple quantitative experiment shows us that mercuric oxide gives up something like a thirteenth of its weight of oxygen, whilst potassium chlorate evolves nearly two-fifths of its weight of this gas. A manufacturer's catalogue—a most useful thing, be it said, in the teaching of chemistry—will tell us the prices of these substances. A simple piece of arithmetic shows us that, whereas it would cost 58s. 6d. to make a pound of oxygen from mercuric oxide, it would cost only 1s. 6d. to make it from potassium chlorate. There seems little doubt as to which we should use were money to be considered, but before deciding we must consider the substances made along with the oxygen—in other words, we must

consult the by-products of the action. The importance of the by-products of chemical actions cannot be introduced too early; we are perhaps too prone, in our school work, to concentrate on the desired product and to pay little attention to the other things made, chiefly because time is limited and sinks are voracious—and *our* by-products do not compel attention by their magnitude. Thirteen pounds of mercuric oxide should yield 12 lb. of mercury—a valuable substance—and if we allow a loss of 1 lb.—for loss is inevitable and the time taken to recover this pound would probably cost more than the mercury is worth—we shall have 11 lb. of mercury to dispose of, worth, perhaps, about £2 4s. This brings down the price of our oxygen from mercuric oxide to 14s. 6d. per lb., still much higher than that from the potassium chlorate. In the case of the latter the residue is a substance found fairly abundantly in Nature, for which there is not a great demand; hence we cannot reckon on retailing this at any substantial sum, especially as it will not be very pure, and purity is a costly quality. We should have to consider the cost of the fuel needed to heat the substances, and the observant members of the form will have noticed that more heat is required to liberate the oxygen from the mercuric oxide, and of course more of it has to be heated to make the desired quantity of oxygen, than with the other substance.

Any means available to reduce further the cost will be eagerly sought after. Thus the addition of manganese dioxide to the potassium chlorate considerably lowers the temperature of its decomposition, and the saving of fuel is of greater value than the expenditure on the manganese dioxide—in other words, as a general principle, the manufacturer is eager to avail himself of the friendly aid afforded by so-called catalytic agents. Many other instances of this nature might be quoted.

Much, then, depends primarily upon the cost of the working materials, and the technical chemist is in constant search for the cheapest raw material. In the case we have taken for illustration, we have to hand, without cost of transport, abundance of raw material, free of charge, in the air around us. Efforts will therefore be made to obtain our oxygen from this by economical means. The solution of this problem may then be conveniently introduced and affords a very nice example of the principles referred to above. If electrical energy were cheap enough, which is not the case in this country, water might be used as raw material.

We have thus dealt with one instance only of the introduction of the cost factor into

applied chemistry, and many more will occur to those engaged in the teaching of chemistry. Chemical calculations should involve the cost factor at times, and it is interesting to note that the Army examiners have on several occasions ventured to introduce this consideration into their papers. In connection with chemical calculations we must not shut our eyes to the fact that, desirable as the metric system is, it is not by any means the order of the day in the technical science of this country, especially in engineering matters, and calculations should include exercises in the manipulation of our own cumbersome weights and measures. A full discussion of cost would involve, of course, considerations not only of material, but of labour, depreciation of plant, fuel, water, packing, etc., which would possibly be considered beyond the scope of school work.

Another technical consideration little affecting our laboratory work is APPARATUS—that is, the material of the apparatus. Glass is convenient for teaching, but obviously impossible on a large scale, and the choice of the most resistive and yet most economical and durable material is another of the great problems of applied science. We may, for instance, make a little dilute sulphuric acid in the laboratory by gradually pouring the concentrated acid into water contained in a beaker, measuring our quantities, and securing the admixture of the liquids by using a stirring rod. But even the laboratory assistant who wishes to make several litres at a time exceeds the limits of glass and resorts probably to a large earthenware jug. If 100 gallons of dilute acid are required, this simple operation becomes complicated by the problem of the mixing vessel and the mixing apparatus. Iron, the cheapest and strongest material, is barred on account of the action of the acid, and we have to resort to lead, which, being comparatively soft, will be in the form of sheets supported by framework. The stirrer will take the form of a paddle revolved by machinery. Iron, however, will replace our glass in the retorts used to make nitric acid, since the curious, so-called "passive state" of iron towards concentrated acids—a phenomenon that does not concern us much in the laboratory, but is immeasurably important in the works—enables this metal to be used. In connection with nitric acid manufacture we have the nice problem of the choice of a more valuable by-product,  $\text{Na}_2\text{SO}_4$ , and a less valuable but more easily removed substance,  $\text{NaHSO}_4$ . Our glass and rubber tubing, which are seldom attacked by the gases and liquids we pass through them, will be replaced by pipes of iron, lead, copper, earthenware,

etc., with due consideration of the nature of the fluids they are to convey, and with particular attention to the method of joining them together, a point that never troubles us in the laboratory. Again, these examples may be multiplied almost without limit.

TIME is a serious factor industrially. With us in the laboratory it is a question of covering ground; with those who work in the factory it is a question of money. We use heat to hasten solution because we are waiting for the solution; they will use it if it can be obtained so cheaply that the time saved will more than pay for it. Thus the exhaust steam from an engine may circulate in coils of pipe immersed in the liquid to be heated. Evaporation may be hastened in this way.

Filtration under reduced pressure, transporting of material in bucket elevators, mechanical mixers, centrifugal drainers—these are some of the many time-saving devices employed.

Neither must we forget that in the works laboratory methods of analysis generally are dominated by the time factor, volumetric methods being employed where possible; in fact, a continual stream of rapid methods of performing this or that operation emanates from our technical laboratories.

Space will not permit of further illustration, but enough has been said to indicate some of the ways in which the youthful chemist may have his outlook broadened by some little glimpse of the problems that confront the men who attempt to carry out (in the thousand-gallon vats of the factory) the very same reactions that he is conducting in a test-tube.

#### THE PROPOSED NEW REGULATIONS OF THE BOARD OF EDUCATION FOR FURTHER EDUCATION.

By JOHN WILSON, M.Sc.  
Battersea Polytechnic.

SOME months ago it was announced by Lord Crewe, in the House of Lords, that the Board of Education was considering the issue of new regulations governing technical education. These have recently been published<sup>1</sup> in the form of a draft of proposed new regulations, which are issued to the public, "not as a cut-and-dried scheme, but as a draft which is still open to reconsideration and improvement." Some of the principles embodied in the scheme are at present operative, in a necessarily crude form, as emergency regula-

<sup>1</sup> Draft of Proposed Revised Regulations for Continuation, Technical, and Art Courses in England and Wales, Board of Education, February, 1917. (H.M. Stationery Office.) 4d. net.

tions. The general principles underlying the draft are :—

(a) To simplify the present unnecessarily cumbersome and complex administrative and financial relations between the Board of Education, the local education authorities, and the governors of technical schools. Much more power will be given to the local education authority in matters of detail, subject to its main scheme for co-ordinating the various forms of further education within its area being approved by the Board. In place of the existing highly complicated system of calculating grants based upon "student-hours," "block grants" will be given to a considerable extent, based upon the work of an institution as a whole. Incidentally, as regards finance the regulations are merely a skeleton, no indication being given as to the actual amounts of these grants. The Board, however, expresses the view that an increased proportion of the cost, both of old work and of new developments, should in future fall upon the grants. This view has been adopted by the Government.

(b) The importance of continuing general education side by side with technical instruction, particularly for younger students, "and of providing facilities for disinterested studies making for wise living and good citizenship." Thus in an appendix dealing with the curricula of a technical school or local college (p. 33) it is stated that "it should provide . . . classes in literature, history, economics, and other humane studies." This is quite an innovation so far as Board of Education regulations are concerned. The idea is excellent and, if properly carried out, will broaden the intellectual outlook of those who pass through these schools.

(c) The classification of technical schools and colleges into various grades, including the recognition of the distinctive status and position of the larger and more advanced schools under the new title of "local colleges." In this connection, we may note that the Board appears to favour co-operation between local authorities for many educational purposes. Such co-operation would prove highly advantageous as regards technical education, notably in districts such as the West Riding of Yorkshire and South-East Lancashire.

(d) The definite classification of courses of study, e.g. preparatory, junior, senior, and advanced, according to the normal age and attainments of the students.

(e) The need for securing the interest of employers and workpeople in technical education, and for developing in particular the higher technical work and research work done in local colleges.

The central point in the new regulations is the complete and systematic "plan" of further education (*i.e.* education which falls outside the primary school, the secondary school, and the university) in each area. This plan will be drawn up by the local education authority, which will be responsible for the proper carrying out of the scheme. The plan must be properly related to elementary and secondary schools and universities; it must be adapted to local needs and circumstances, and it must offer to every student facilities for a graduated and progressive course of instruction suited to his or her requirements. This is, of course, merely carrying out what is, more or less, the practice in certain districts already. The Board clearly hopes to obtain, through the new regulations, partly by the lever of monetary grants, a "levelling up" of those areas which up to the present have distinctly lagged behind the others. There is, of course, a certain danger, in this increased power to the local education authorities, to those institutions which are now not directly controlled by these authorities, especially as the regulations, as at present drafted, give no right of appeal from the local education authority to the Board. It is a matter of considerable doubt whether or not the progress of "further" education, in a number of administrative areas, is dependent upon a great increase of centralised State control as compared with the control by local education authorities, as at present constituted.

The regulations, as a whole, provide a framework for future developments in "further" education, leaving the details to be filled in later. They clearly have in view, for example, the possibility of the formation of larger authorities than exist to-day for controlling higher education, and of the introduction of compulsory attendance at part-time continuation schools for young persons between the ages of, say, fourteen and eighteen. In this connection, it is significant that the Departmental Committee of which Mr. J. H. Lewis, M.P., is the chairman, in its final report, definitely recommends compulsory attendance for not fewer than eight hours a week for forty weeks in the year for young people between the ages of fourteen and eighteen who are not in full-time attendance at secondary or technical schools. The London County Council Education Committee has also recently suggested that some form of compulsory continuation education for young people from fourteen to seventeen years of age is desirable. In its valuable report on the question this committee states that, after inquiry, it finds that many employers would favour this, if compul-

sory. Most employers think that, if continuation schools are necessary, they should be compulsory, as only by compulsion can the willing employers be protected. The committee further states that, although the present voluntary system of evening continuation schools has done good work, and has had a wide influence on the whole educational system, it has not succeeded in attracting more than a small proportion (in London, 25 per cent.) of adolescents. Those who most need continued education and discipline stay away.

The most important advance which could be made in "further" education at the present moment is the introduction of compulsory attendance at part-time continuation schools, as described above. If this could be brought about, it would be the greatest educational advance in this country since the passing of the Act of 1902. Moreover, there is a pressing need for a large increase in the number of students receiving further education, not only in part-time continuation schools, but also in junior technical schools, especially in the day technical colleges. These students must be better prepared as regards their previous education, and they must be enabled to stay for longer periods under tuition than at present. Without this, the valuable improvements respecting administration and organisation embodied in the draft regulations will be of comparatively little practical value.

#### THE EASTER MEETINGS OF THE NATIONAL UNION OF TEACHERS.

THE Easter conference meetings held in London under the auspices of the National Union of Teachers created a high standard in the long record of the union for the businesslike manner in which the various subjects were discussed. The basis of the conference programme was the consideration of the scheme of educational reform drawn up by the executive after consultation with the National Association of Head Teachers and the National Federation of Assistant-teachers.

The presidential address summarised in a practical manner the main points of reform as presented from the teachers' point of view, and the new chairman, Mr. T. H. J. Underdown, created an excellent impression not only by his grasp of the essentials necessary for securing the future welfare of the nation, but by his tactful and generous spirit in dealing with the situations which inevitably arise when feeling and enthusiasm run high. The wide and tolerant spirit with which the most diverse opinions were received augurs well for the success of any serious proposals of school

reform which the Government may propose to enact.

Two omnibus resolutions representing the policy adopted by the executive were set down for discussion, the first, dealing with educational progress, being in charge of Mr. C. W. Crook. The proposals included a full and free system of national education, primary, secondary, and university; the raising of the school age to fourteen, and compulsory continuative education until the age of eighteen; and differentiation of type in secondary schools in order that young people may best develop their special gifts of mind. For this purpose, in addition to the courses which constitute the main avenues to the professions, he advocated the establishment of schools having an art basis, and scientific, technical, and industrial bases.

Admission to such schools was to be dependent upon the capacity of the pupils to take full advantage of the instruction given, and all advanced courses of this type should develop naturally from the primary-school curriculum. In this connection Mr. Crook laid considerable stress upon the lack of co-ordination between the existing schemes of primary and secondary education, and regarded with considerable apprehension the fact that large numbers of children below the age of twelve years are being taught in secondary schools. The feeling of the conference was evidently strongly in favour of Mr. Crook's contention that no child should proceed to a secondary school before the age of twelve years. Mr. Crook further urged a distribution of the cost between the State and the local authority, the former making grants in proportion to the expenditure incurred by the latter; and he also advocated the abolition of street trading by young people; greater attention to physical development by means of the provision of school meals, and medical inspection and treatment; the provision of adequate playgrounds and playing fields; a reduction in the size of classes; and an improvement in the number and qualification of teachers by means of an increase in the attractiveness of the teaching office. An important amendment was added to the effect that statutory powers should be granted to the local education authority to supervise the employment of young people. There was a widely held opinion that the system now carried out under the direction of the Board of Trade would be improved if it were assimilated as a portion of the administrative work of local education committees.

The second resolution had reference to the emoluments of teachers. The statements

made as to the scales of salaries now in operation revealed the fact that many teachers are receiving considerably less than agricultural labourers. Improvements were asked for in the superannuation scheme, and a scheme modelled upon the new Act in force in Scotland is recommended for adoption. Promotion to the higher branches of the Board of Education service, and substantial and immediate improvements in the salary and status of teachers, were, in the opinion of the conference, the only remedies which would give the dying teaching profession vitality.

The problems of equal payment of salaries to men and women teachers, and the establishment of a minimum salary rate of £100 per annum, were each fully discussed, and while a considerable body of opinion was expressed in favour of equality of payment the voting showed a decisive adverse majority. No definite action was taken with regard to the raising of the minimum scale of salary, but there was absolute unanimity in supporting a resolution inviting the executive to use every effort to secure the adoption of the National Union scale of salaries throughout the country. This scale is exceedingly modest both for primary- and secondary-school teachers, and, in addition, it is a pre-war rate. All members of the union, in view of the terrible conditions under which many of their colleagues in the country and small towns are existing, feel that the policy of the executive in working for a standard scale of salaries to be conceded within a reasonable period of time is based upon moderation and is the soundest policy which can be adopted at the present juncture. It was essential, in view of the Government programme of reform, that teachers should have a definite minimum salary programme as a first step. All other reforms are contingent upon the provision of an adequate and well-equipped teaching profession; and the Easter meetings have given the executive a whole-hearted and enthusiastic mandate to place before the Board of Education and the whole country the programme presented by it to the members of the conference. In due course any Parliamentary proposals for reform will be discussed upon a comprehensive basis, but the immediate policy of the union, as expressed and approved at the Easter meetings, is "First things first." Members of a starving profession cannot be expected to be enthusiastic about school reform, and in confining the discussions to the rudiments of reform there is no doubt the union reaped a rich reward. The debates were profitable, inasmuch as they cleared the

vision of all who had the privilege of following them; and as a result the National Union of Teachers has entrusted its Parliamentary leaders and its executive with a simple and reasonable plan of school reform which should commend itself to the House of Commons and the deliberate policy of professional experts.

#### PERSONAL PARAGRAPHS.

**T**HE death is announced of Miss Margaret Christie, headmistress of the Wycombe High School. After a brilliant career at St Andrews, she became a mistress at Arbroath High School and specialised in modern languages; she gained a Frances Mary Bus Travelling Scholarship. In 1901 she was appointed first headmistress of the then County Secondary School, High Wycombe. For a few months after her appointment she was sole mistress of the school, which opened with only twenty pupils; there were no school buildings, rooms in the Science and Art Schools being temporarily used. Difficulties of accommodation of a governing body new to its duties and of provincial dislike of innovation seemed to act but as a spur to her enthusiasm; they were steadily lived down and the school grew rapidly. From the first discipline was maintained without punishment. Offenders seldom needed a second "talk" in the headmistress's room. A few judicious words spoken at the daily assembly, pointing out general faults and encouraging all to higher endeavour, fostered a strong *esprit de corps*.

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MISS CHRISTIE was both loved and respected to an unusual degree. As a woman she was gentle and sympathetic, always self-possessed, unassuming, and strong. It is to her remarkable tenacity of purpose and her attention to detail that the school owes so much. Very few knew her intimately, for her geniality cloaked an almost impenetrable reserve. On the other hand, she made it her business to know every member of the school personally. The school motto, "Fortiter, fideliter, feliciter," found its practical application in a life lived wholly for the interests of the school.

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MISS MARGARET EVE, whose death is announced, was from 1891 to 1906 a member of the London School Board; she was the first woman member of the governing body of Christ's Hospital. Herself a born teacher she devoted a large part of her leisure to entertaining teachers, helping them with their reading, and taking out large parties of them to Switzerland and Italy. In spite of a cer-

ain shyness, which had a charm of its own, she was very downright in her views on public policy, and upheld a high standard on the School Board and as a manager of schools. Miss Eve, who lived with her brother, a master at Wellington College under Benson and Wickham, and afterwards headmaster of University College School, had a genius for friendship. Old friends were never lost, and new ones, especially among young people, were being continually added. Her memory will long be treasured by the many to whom she was a true friend.

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THE recent death of Mr. Walter Baily removes one who had won for himself, by his services to education, widespread regard and affection. After a brilliant university career he was appointed inspector of schools in the West Riding of Yorkshire. In London he is best known in connection with his work for University College, on the council of which he served for many years; he was also intimately concerned with the removal of University College School to Hampstead. Mr. Baily was a keen student; he invented the two-phase electric motor and the integrating thermometer, and contributed a number of scientific papers to the *Philosophical Magazine*.

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THE REV. CANON R. T. JONES died on April 1st after a long and painful illness. Canon Jones, who was a native of Lampeter and educated at St. David's College, in that town, took a mastership in England until he was old enough for ordination. On reaching the age of twenty-three he presented himself for ordination, and eventually became one of the most brilliant of Welsh Church orators.

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"THE premature death of Charles E. B. Russell," writes Mr. Aitken, of the Home Office, "will be deeply regretted by all who are interested in the welfare of the young, and especially by those who work among lads. All over the world men who came under his influence will feel that they have sustained an irreparable loss. His enthusiasm, magnetic power, and personal charm brought him ready helpers, and his example and the books that he wrote, often in collaboration with his wife, on problems of boy life led many others to work in the field which he had made his own." Mr. Russell served on a Departmental Committee on Reformatory and Industrial Schools in 1913; shortly afterwards the Home Secretary offered him, and he accepted, the Chief Inspectorship of those schools. To this

work he devoted himself whole-heartedly, and in addition to the duties of inspection he issued a number of very useful and suggestive circulars and pamphlets, showing that he possessed intimate knowledge of his subject and was inspired by the highest motives.

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MR. F. B. DAVIS, who has been second master at the Leamington Boys' Secondary School since January, 1907, has been selected for the appointment of headmaster of West Bridgford Higher Grade School and Pupil Teachers' Centre, Notts. Mr. Davis was educated at Queen Elizabeth's Grammar School, Hartlebury, and graduated with honours in modern European history at London University. He is a licentiate of the College of Preceptors and a fellow of the Royal Historical Society, and he holds the Board of Education elementary teachers' certificate. For the past twelve months Mr. Davis has had charge of the Leamington Technical School literary and science departments. He is a good all-round man, and during his residence in Leamington has won the esteem and respect not only of the headmaster, staff, and boys of the secondary school, but of all with whom he has come into contact.

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MR. E. CREAGH KITTON, formerly chief master of the modern side, Whitgift Grammar School, and occasional inspector to the Board of Education, has accepted an appointment under the Intelligence Department of the War Office, and is serving in France with the rank of second-lieutenant.

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MISS EDITH M. L. LEES, a mistress at Redland High School, Bristol, who took the Honours School of Modern History when at Somerville College, Oxford, has been appointed headmistress of Birkenhead High School.

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MISS MARGARET W. BYRNE, Natural Science Tripos, Girton College, Cambridge, and a mistress at King Edward's School, Birmingham, has been appointed headmistress of Tunbridge Wells High School. She is to take up her duties there in September.

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AN example shows that the difficulties mentioned in last month's Personal Paragraphs were not overstated. A headmaster, after applying to the various university appointment boards and professional agencies, advertised a vacancy in his staff. The bag was extensive and peculiar, but contained no qualified men teachers. Among the applicants

were a barrister, a musician, an artist, an actor, and two correspondence clerks in business houses, whose correspondence had vanished "owing to the war."

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TESTIMONIALS are still a subject of great interest to teachers; they are usually eloquent in what they say, and perhaps even more eloquent in what they leave unsaid. Of even greater interest is the testimonial beside which a reply to inquiries directed to the writer of the testimonial can be placed. Here is a recent example:—"Mr. X is a courteous gentleman and a scholar." "Mr. X is courteous even to servility; he is the worst disciplinarian I ever struck. . . ."

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A CASE of considerable interest to science teachers was recently tried before Mr. Justice Darling. A boy claimed damages from the Middlesex County Council for personal injuries received during a chemical experiment through the alleged negligence of the defendants. Prof. Armstrong appeared as a witness on behalf of the teacher, stating that the experiment was a proper one, both instructive and desirable; that the teacher's explanation was admirable and correct; and that the teacher had done everything that could reasonably be expected. Both Prof. Armstrong and the headmaster stated that the method of teaching chemistry by allowing the pupils to perform experiments themselves was far better than lectures or demonstrations by the teacher. Nevertheless, the jury awarded damages amounting to £250 to the boy and £25 to the father.

ONLOOKER.

#### PRESSING NEEDS OF ELEMENTARY EDUCATION.<sup>1</sup>

THIS great war, with its terrible wastage of human life and material, has brought into bold relief the economic potentialities of the child. As never before, the nation now realises that efficient men and women are the best permanent capital the State possesses. This natural human product is made—well fashioned and well equipped—or marred, misshapened, and stunted—by the time the threshold of manhood is reached. Hence greater national concern is in evidence for the care and upbringing of the child. This nation, with the stern and strenuous competition awaiting it in the markets of the world when peace comes, cannot afford to waste the life of a single one of its children. Any economy, even in war-time, which undermines the efficiency of our educational

system yields a hostage to our future safety and prosperity. Any Englishman who puts forward such a hostage—a child's welfare—is unworthy to bear his country's name.

#### BAD CONDITIONS OF SCHOOL-LIFE.

And yet the wastage is going on, not alone in isolated cases, one here and another there, but in a wholesale and profligate manner. First, there is the tragedy of the 90,000 innocents, English babies annually lost before the age of one year, whose brief life is "like the snowfall in the river, a moment which then melts for ever." Into that problem, rather more social and economic than educational, I do not propose to enter now. The 6,000,000 children attending the primary schools may be claimed, therefore, as the survival of the fittest and the more fortunately placed. It is no exaggeration to say that a large majority of these children are heavily handicapped at the outset of life's race and throughout their school course by the adverse physical and hygienic conditions under which the State is forcing them to attend school. Disease and dirt are the deadly enemies of education, and Sir George Newman, the chief medical officer of the Board of Education, reports that 150,000 out of every 1,000,000 are unclean; 60 per cent. of the examined suffer from dental diseases; 20 per cent. suffer from disease of the nose and throat; 10 per cent.—that is, about 600,000—are suffering from malnutrition. Of these he says: "The malnourished child tends to become disabled and unemployable, incapable of resisting disease or withstandings its onset and process." The feeding of these children, the victims of improper or insufficient meals, by the education authority is the only means of relieving them of the suffering and injury inflicted upon them. Experiments at Bradford have shown that the provision of such meals is just as essential during holiday periods as upon school days.

The standard of school buildings leaves much room for suspicion in estimating the effect of school-life upon the health of the child. Unsuitable sites, damp ground or in noisy thoroughfares; insufficient ventilation, heating, and lighting; overcrowded classrooms with forty to sixty children, and floor space rarely more than ten square feet per child; restricted playgrounds and practically no provision for playing-fields; the absence of baths and facilities for physical training: these are but a few of the dark blots upon the present conditions prevailing in many of our primary schools. Surely it is not an unfair question to ask whether the State, having adopted a compulsory system of education, ought not to fulfil its obligation on the other side of the contract and make full, complete, and ample provision that each child should be educated under healthy and hygienic conditions. The State in its war-time need has profited by its experience amongst munition and other workers, and now more fully realises that proper housing, proper feeding, and proper conditions of living and working are essential factors in securing an efficient output. Money so spent is repaid tenfold. So it is with the children. Are not they, too, worth to receive the State's fullest care?

<sup>1</sup> From the presidential address delivered by Mr. T. H. J. Underdown, Ashton Gate Council School, Bristol, at a meeting of representatives of Associations of the National Union of Teachers held in London, Easter, 1917.

Another force militant against educational efficiency child labour. In 1903 the Employment of Children Act gave local education authorities powers to make laws restricting child labour. Up to the outbreak of war only ninety-eight of the 329 authorities had made such by-laws affecting the general employment of children, and only 131 had placed a check upon street trading in the streets. Certain forms of child wage-earning labour, particularly street-trading, provide such snares and pitfalls that no child should be subjected to the ordeal and temptations lurking in such occupations. While many survive the trial unscathed, it proves for others the slippery slope to social wreckage, the cult of the loafer and the wastrel. The prevalence of the less vicious forms of child wage-earning labour out of school hours (in Birmingham 10,000 children were so employed in 1913-14) and the frequent regular absences from school for this cause, winked at by certain authorities, is a serious menace to the individual child's development, and a serious drag on the efficiency of the primary school. The half-time system in vogue in the textile industries has already carried its own condemnation. Child labour stands to-day at the bar publicly arraigned. The tired and sleepy scholar, the disorganised school, the loss of parental control, the early declaration of independence, the stunted growth, the maimed and mangled body, are but a few charges in the indictment laid against child labour. The case is clearly proven, and legislation must sweep this menace from our industrial system.

#### EXTENSION OF SCHOOL AGE.

The law relating to attendance at school is very complicated. Under the Act of 1870 attendance was made compulsory between the ages of five and ten; this limit was raised to eleven in 1893, and to twelve in 1900, where it has too long remained. Many authorities have used their statutory powers to enforce attendance until fourteen years of age, when the child passes entirely from educational control, although the Board of Education pays grants for attendance at a primary school of those who do not reach the age of sixteen during the school year. It is stated by Lord Gainsford, Mr. Fisher's predecessor on the Board of Education, that the number leaving the primary school annually under thirteen years of age is 73,000, at thirteen is 176,000, and before reaching fourteen is 336,000, while only 40,000 remain at school after reaching fourteen years of age. Of this half million, only about one in ten proceed to a secondary or an evening continuation school. In view of the great wastage of educational effort and the subsequent loss to national efficiency, the most urgent and pressing reforms awaiting enactment by Parliament are:—

- (a) The abolition of half-time, and other forms of child wage-earning, child labour.
- (b) The prohibition of street-trading by persons under the age of sixteen or eighteen.
- (c) The raising of the statutory minimum leaving age from twelve to fourteen, accompanied by powers under local by-laws to enforce attendance to fifteen or sixteen.

It is little use to attempt to extend the superstructure of higher education provided by secondary, technical, and continuation schools, urgent though these extensions are, until the foundations in the primary schools are truly and firmly laid.

Into the problems of this superstructure of further education time forbids me to enter; but I wish, in passing, to emphasise the urgent need for the establishment of a compulsory system of day continuation schools accompanied by a statutory limitation of the hours of labour. It is very encouraging to note that the Departmental Committee on Juvenile Education in Relation to Employment after the War unanimously recommends in its recent report that all young persons between the ages of fourteen and eighteen should attend day continuation classes for not fewer than eight hours a week for forty weeks in the year. I further emphasise the need for extended facilities in all the higher branches of technical, commercial, scientific, and industrial education, and the need for the opening of all institutions of university and kindred rank to those able to profit fully thereby, irrespective of creed, status, or means.

#### A CHANGE IN THE NATION'S ATTITUDE.

These developments can only take place by the nation's will. That will can only be exercised when the nation's soul has fully awakened to the sacred duty laid upon it—the education of its future citizens. Precedent to reform, then, must be a fundamental change in the attitude of the nation as a whole towards its schools, colleges, and universities, and towards those who labour in them, both to teachers and taught. The social conscience of the nation must arouse from its slumber. Every obstacle of poverty or of social disability standing in the way of a child's receipt of the highest education by which he is able fully to profit must be removed by, and at the expense of, the community. The upkeep of education must be removed from the taint of charity. No parent, except in very few cases, pays the whole cost of the higher or university education of his offspring. The financial support for making efficient citizens and equipping skilled workers must be granted as readily and as amply in the coming time of peace as have been the provisions for national efficiency in waging war. Organised labour and organised capital may well avoid contests of strength in which the children are deeply scarred, and, instead, find the common factor in the child's welfare. Education in its fullest sense is a training for life, and not merely a preparation for a definite vocation in life, and at all points of contact with life, from infancy to adolescence, education must be made a *life-saving* process as well as a process of development of the faculties.

#### THE FAILING SUPPLY OF TEACHERS.

The reforms I have indicated are of supreme importance, yet every attempt to set them afoot is foredoomed to failure unless accompanied by immediate steps to secure an adequate supply of qualified teachers. Every single project carries with it an added demand for further teachers. For example, the raising of the leaving age to fourteen would retain

an additional 250,000 children for at least a year, which on a basis of forty children per teacher—not by any means a liberal standard of staffing—would require an additional 6,000 fully qualified teachers. Elaborate buildings and well-furnished schools, without teachers with the highest ideals and well trained to practise those ideals, are as ships without men. But the supply is failing apart from the fact that of the 20,000 teachers on war-service many will either remain in the Army or Navy, or find other posts with brighter prospects. The number of intending teachers in 1906 was 11,901, and this fell to 5,679 in 1912, and although a slight increase to 6,938 is shown in 1916, the improvement is quite inadequate to warrant any confidence for the future. From these numbers must be deducted a large percentage who fail to qualify. Figures given by the Board of Education in 1915 show that in a recent year only 63 per cent. of the bursars and 53 per cent. of the pupil teachers afterwards proceeded to a training college to complete their qualifications. Thus only a few more than half the 6,030 entrants, the average number for the last six years, are likely to become fully qualified teachers. This supply of 3,000 per annum is totally inadequate, as the wastage amongst teachers has been estimated at 7,000 yearly, due to loss by death, superannuation, breakdown in health, transfer to other more lucrative walks of life, and to marriage, which was found over a period of twenty years to account for 75 per cent. of the removals of women teachers from the profession.

To cope with this decline various remedies have been tried. The pupil teacher system has been revived. With the consent and approval of the Board of Education, the local authorities hold out bribes to intending teachers in the form of free secondary education and bursaries. Others go a step further and offer a money grant towards the cost of a college training, on condition that the recipient binds himself to return to the service of that authority. In addition to this golden staircase to the teaching profession, bright and alluring pictures, more or less illusory, have been painted, alleging that teaching is easy work, that the hours are short, the holidays long, and the occupation respectable. "Distance lends enchantment to the view." Surely the pictures should be sufficiently attractive to allure recruits. For a time they fulfilled their purpose. Young people entered the profession full of hope, only to find it was a good profession—"to get out of." The truth is out. The other side of the picture is open to all who read its unmistakable warning—that to become a teacher is to face scanty recognition for toil, to give the best energies without rewards at all comparable with those of similar walks of life.

#### MEAGRE SALARIES.

Here are the facts relating to the salaries of full-time certificated teachers as shown by the latest information published by the Board of Education in 1915. In England and Wales, out of 105,000 certificated teachers, two headmasters, one headmistress, one certificated assistant-master, and 218 certificated assistant-mistresses received less than £50 per annum

—that is, less than 19s. 3d. per week. (I intentionally reduce to weekly amounts these starvation wages paid to sweated teachers, as so many people forget to divide teachers' salaries by 52.) The facts are

Certificated masters	Certificated mistresses	Less than £	Less than £
3 ...	219 ...	50 = 19 <i>1/2</i>	per week
42 ...	1,135 ...	60 = 23	" "
315 ...	4,568 ...	70 = 27	" "
758 ...	13,020 ...	80 = 30	" "

Viewed in another way:—

468 headmasters	4,783 certificated as-	Received less than £100 a year = 1
	sistant-masters	
4,847 headmistresses		than 38s. 6d.
32,013 certificated as-		week.
sistant-mistresses		

Total 42,111 certificated teachers

From these meagre sums £3 12s. for men and £2 8s. for women are deducted every year towards an equally meagre superannuation allowance. Thousands of professional, educated men and women selected by the State, medically examined at more than one stage of their academic preparation and professional training, tested by his Majesty's inspectors of schools as to fitness over and over again—these men and women are disgracefully and shamefully paid. These are strong words, but not strong in face of the facts, whether viewed in the individual incidence or in bulk—i.e. 42,111 out of 105,930 fully certificated teachers employed in 1915, or about 40 per cent., received less than 38s. 6d. per week. Further, these figures take no account of the salaries of 41,000 uncertificated teachers and 13,000 supplementary teachers, in which classes the salaries are probably not more than 50 per cent. those for the certificated teachers above mentioned.

#### PROSPECTS AND PROMOTION.

Another aspect of the problem is the opening to young educated people of other avenues and ways of life which are more attractive in prospects, less costly in training, less exacting in the daily tasks, and more substantially remunerative. The teacher successfully competes with the classroom for the services of the educated woman. The counting-house, the insurance office, the engineering works, to say nothing of the other professions, provide far brighter prospects for the youth than he can hope to realize as a teacher. Thus the teaching profession stands to lose its fair proportion of the supply of the best brains the nation produces. The only sources supply likely to remain permanently are the physically handicapped, the vocational called to the labour, and those who fit themselves eliminated from other more coveted positions by the sieve of competition.

Those already in the service find themselves cramped, barred, and chained by small prospect of promotion to higher posts, both professional and administrative, and by the narrow limits of the scale of salaries. The class-master of to-day has in the large towns only a 1 in 100 chance of promotion

headmastership, and this for the fortunate few only takes place before they are forty-five years of age. His position is therefore practically permanent, his salary stationary until the end—his retirement at sixty-five years of age. If the fully qualified teacher is to survive as a professionally living force in the schools, the outlook must be made brighter and the position such as will provide for an educated man or woman a satisfactory career in itself and within its own confines. The present salaries fall short of such prospects.

#### INADEQUATE PENSIONS.

Inadequate retiring allowances further accentuate a check upon the supply of teachers. The maximum pension for a master retiring now at sixty-five years of age, after forty-five years of service, is £69, and for a mistress £60. Further, the Teachers' Superannuation Act of 1898 applies only to service in State-aided primary schools. Service in a secondary, technical, or other school does not count. This places an obstacle in the way of that free intercourse from one type of school to another which is so essential for the life and vigour of our educational system from the kindergarten to the university. A pension scheme embracing all sections of the profession is long overdue. The retiring age of sixty-five is far too high, and retirement should be optional at sixty. The fact that the premiums paid (£3 12s. per annum for men and £2 8s. for women for possibly forty-five years) are non-returnable in the case of death before pension age is unsatisfactory.

#### CONCLUSION.

To lay bare the cankerous wound which is sapping the life-blood of the teaching profession has not been a pleasant operation to me, and but for a strong sense of duty—a duty to the profession to which we are proud to belong—a duty to the children of our country—and a duty to the future progress of our Empire—I would in very pity for a noble calling have preferred to draw the veil over the poverty prevailing in the teaching profession. But educational reform is in the air. Of programme-making there is no end. Our programme, made in the deliberate time of peace, stands the test unimpaired in the time of war. Other educational bodies are equally agreed upon the essentials. Parliament need not delay. To wait for a peace declaration would be fraught with serious danger to education. So I urge you, standing, as you do, arrayed and in line with all the best forces of progress, to press forward to a successful issue. I have great hope for the future. I believe the heavy travail of war must of necessity give birth to a more sympathetic treatment of the child. And in this new field of sympathy the teacher must play the dominant part. For, as has been well said:—

"The greatest of all influences in the schools will be the personality of the teacher. It is he who will write upon the plastic heart and mind, kindle the fire of hero-worship, inspire with noble idealism, and guide the unfolding character, with all its weakness and immaturity, to a full development and the realisation of some, at least, of its splendid possibilities."

#### MR. FISHER'S EDUCATIONAL PROPOSALS.

MR. FISHER introduced the Education Estimates in the House of Commons on April 19th, too late for us to deal in detail with his masterly speech in this issue, but we hope to return next month to the policy adumbrated by the President of the Board of Education.

The sum which Mr. Fisher asked the House to vote for education in 1917-18, being greater by £3,829,048 than the amount voted by Parliament in the year 1916-17, involves the largest increase as compared with the Estimates of the preceding year which is known in the history of the Board of Education. Our total expenditure on education in England and Wales amounts to £40,000,000, "eight times the value of our annual importation of oranges and bananas," as Mr. Fisher said.

After considering the ordinary Estimates concerned with education as we knew it last year, the President proceeded to explain the purposes for which the increased Estimates are required. An additional grant for elementary education of £3,420,000 is to be made to local authorities in accordance with the scheme—36s. per child in average attendance, minus the produce of a 7d. rate, plus three-fifths of the salary expenditure, and plus one-fifth of the other net expenditure—which means that more grant will be paid to the poor than to the rich authority, more to the generous than to the niggardly authority, more to the authority which believes in flesh and blood than to the authority which puts its trust in bricks and mortar. The conditions to be attached to the grant may be summarised as:—

1. The maintenance of an adequate and suitable staff of teachers.
2. The progress of older scholars by means of special schools or otherwise.
3. The provision for teaching of handicrafts, cookery, gardening, and other special subjects.
4. The efficiency with which the law of school attendance is administered.

After describing secondary schools as "the key of the situation," Mr. Fisher explained the purposes for which the increased grant of £433,500 for secondary education is to be used. "It will," he said, "enable the secondary-school teachers to receive better salaries; it will enable them to contribute to a pension fund; a part of the money no doubt will be expended in improving equipment." The Board proposes to raise the grant per pupil in all types of aided secondary schools by £2, but conditions are to be attached to the increased grants. Provision must be made for the organisation of advanced work in secondary schools, with sufficient assistance to poor children taking these courses, and the multiplicity of examinations is to be discouraged.

Mr. Fisher made it clear that these additional grants constitute an instalment—in view of the country's needs educationists will say a very small instalment—of the Government's plan of educational reform. But he promised for the future a better co-ordination of all types and grades of school; the development of

country schools; the establishment of nursery schools; the raising of the school age to fourteen; and the inauguration of a reasonable continuation-school system.

## ITEMS OF INTEREST.

### GENERAL.

THE President of the Board of Education has written to Prof. I. Gollancz that the proposal to establish a "Shakespeare Day" in the schools as a national institution has his hearty sympathy, and that he is prepared to instruct his Majesty's inspectors to authorise any necessary deviations from the time-tables in schools which wish to observe a "Shakespeare Day." The movement is to be entirely free, date and details to be left to local initiative. The Shakespeare Association is forming a special committee of representatives of educational bodies and others for the purpose of furthering the proposal. A meeting will be held at King's College, Strand, London, on May 3rd, at 5.30 p.m., when Prof. Gollancz, president of the association, will give an address on the subject.

THE annual service, as arranged by the executive committee appointed by representatives of most of the associations of teachers, both elementary and secondary, will be held, with the kind permission of the Dean and Chapter, in St. Paul's Cathedral on the evening of Ascension Day, May 17th, at six o'clock. All members of the teaching profession are cordially invited. Tickets of admission are not required, and there will be no reserved seats. The committee is of opinion that the service should again take the form of a Service of Intercession in connection with the war, and arrangements are being made accordingly. The sermon will be preached by the Rev. Canon Newbolt.

THE retiring chairman of the London Education Committee has taken occasion to make a statement regarding the educational work of the London County Council during the past twelve years. The statement is intended to show in what directions the council's heavy expenditure has gone, and just why it is that London claims larger grants from the National Exchequer. The list of the council's activities is too long to be quoted here in full. We note, however, that the council now possesses twenty-two secondary schools, sixteen of which have been provided by the council, the remaining six having been transferred from independent governing bodies. The council has also aided, during the past year, thirty-four other schools, which are dealt with under a "block grant" system for periods of three years. In addition to maintenance grants, the council has given building and equipment grants to aided secondary schools. The council also claims to have set an example in regard to the salaries of secondary-school teachers, which has raised the standard of salaries in the provinces. Other parts of the chairman's statement refer to central schools, open-air and special schools, training colleges for teachers, trade schools,

evening institutes, polytechnics, university grants, & so on.

THE Joint Matriculation Board constituted by Universities of Manchester, Liverpool, Leeds, Sheffield and Birmingham has revised its regulations for entrance to the faculties of medicine, and no longer requires that Latin should be taken as an obligatory subject. The conditions imposed by the board entry to the faculty of medicine are now identical with the general conditions for entrance to the several faculties of the Universities. The regulations of Joint Matriculation Board do not affect the power of any University to impose further conditions for entry into any faculty. The further conditions imposed by any University can be learned on application to the registrar.

THE Uplands summer meeting for teachers and parents will be held from Tuesday, July 31st, Thursday, August 16th, 1917, at the Normal Colle<sup>g</sup>e, Bangor, North Wales. All communications relating to the meeting should be addressed to Miss A. Purvis, Lady Lane, Bingley, Yorks.

THE activities of Middlesbrough range round a commodity—iron, and it is urged that the education authority has an excellent opportunity to be an educational pioneer and to establish schools, which children will wish to attend, because they are treated as individuals, and which will retain a hold upon them and form a centre for them during adolescence. The practical suggestions are definite: "Let the school be in a place where the child learns by doing and not by being talked at." Rooms should be allotted to, and fitted up for, subjects, and each room should be worked the whole time. Teachers should teach their "strong" subject. Avoid standards and fit each child into place as regards each subject, so that he may progress at his own speed. Reduce the amount of writing. English should be used as a means of expression. Drawing should be drawing and not art. In arithmetic lop off the useless matter, and proceed as far as possible to mathematics, which is most essential to the town. Finally, let the school become a community doing its own repairs, making its own materials, and, therefore, an expression of corporate life as a unit fitting into due place with other social units both above and below. These suggestions from the Director of Education were, learn from the *School Government Chronicle*, approved by the education committee, and a further report on the establishment of such schools is to be prepared.

SIR NAPIER SHAW, F.R.S., contributed to the *Quarterly Journal of the Royal Meteorological Society* for January a paper in which he set forth his views on "Meteorology for Schools and Colleges." He shadows a time when meteorology will be recognised as a subject of national importance, and considers that it will be necessary for the subject-matter of meteorology to be arranged in some sort of order of development to suit various ages of students. The schools which teach meteorological facts in relation to geography, and attempt an explanation of those facts suited to the immature minds of older children,

parently, doing satisfactory work. The ground-work of the subject with map, diagram, and statistical tables, and a development of the facts correlated with a school science course, is suitable for schools. The alleges, however, are in a different category. There is a distinct lack of the superstructural development of meteorology, in which the imperfect explanations of the schools, which may be fairy tales, are displaced by reasoned statements, dealing with measured quantities, of the relation between cause and effect. There exists for text-books specially written for meteorology with the necessary physical introductions. There is an urgent call for a masterly chapter on radiation; for the whole of the phenomena owe their entire power to the sun. The experienced teacher of meteorology is scarcely to be found at present in colleges, and not frequently in schools.

The *Educational Review* (U.S.A.) for March contains two articles: "Should Specialists Specialise?" by Prof. W. T. Forster, of Reed College, and "Some Reflections on the Liberal Curriculum," by Miss Grace Goodale, of Barnard College. Prof. Forster holds that the controversy between practical and cultural studies is perhaps the most futile of modern discussions. No subject can be sensibly considered apart from the animating purpose of the teacher, the attitude of the student, and the dominating spirit of the institution. Democracy has often tried to abolish the hindmost by decree, and our schools have long proceeded on the assumption that all children are fit for abstract forms of higher education; but the great majority of men and women are dependent upon leaders. Yet the education of such leaders is no less practical than the education of plumbers. The world to-day, in abundant measure, available men and women equal to the tasks of leadership; and for them it is urged that we need broadly cultural studies. Miss Goodale avers that a liberal education should comprise in some form or other elements representing the fields of language and literature, of the natural and the social sciences; and that the bedrock of such education is classics, vitally taught, not only for the effect upon the student's ability to use words and to distinguish successfully between words and ideas, but for the effect of classical studies upon the student's personality, towards breadth of sympathy, sensitiveness of perception, and a sense of the unity of humanity. Modern tendencies converge towards an emphasis upon the things of the mind and of the spirit, and education is concerned not merely with the making of a livelihood, but with the making of men and women.

Mr. ALEXANDER FICHANDLER, principal of one of the public schools in Brooklyn, described, in a recent issue of *School and Society*, a suggested modification of the usual American method of controlling a school. In general, all authority is vested in the principal or the superintendent; teachers have no voice in the conduct of the affairs of the school except occasionally by the grace of a benevolent autocrat. They are expected to obey implicitly, and to carry out the

directions of their superiors without murmur or question. The writer administers his school democratically; all school problems, administrative and pedagogic, are presented for free discussion to the teachers concerned, all solutions are submitted for their comment, and are adopted only when approved by the majority; the approved solution is entrusted to the teachers to execute. There are regular meetings of the staff as a "teachers' council." This experiment has been tried for four years, and has resulted in the development of the spirit of co-operation and harmony throughout the school, for the teachers carry out similar ideas within the classrooms. The teachers were invited to express their views upon the system; some of their remarks are interesting. The teacher is credited with a certain amount of brain-power; the spirit of servility has disappeared. Every teacher can say "our school" instead of the usual "his school." Teachers are brought into close relation with each other; thus the formation of cliques is avoided. The net result has been a development in the human personality of the teaching staff.

We learn from *School and Society* that on September 1st, 1917, when the United States Federal Child-labour Law becomes operative, 27,000 factory children between the ages of ten and thirteen, and 17,000 children in mines and quarries aged ten to fifteen, will be thrown out of employment. Most of the factory children are working in the Southern States, chiefly in textile mills. Most of the mining children are at least fourteen. It is not expected that many of these children will go to school; they will probably find work in a bakery, laundry, or in some other unregulated occupation. If the State School Law requires only four months' school attendance annually, or permits exemption on the score of poverty, the boy is not to be expected to care greatly for education; and if the new law does not require inspection of bakeries, etc., the boy will certainly find some employment. In addition to these children, there are 100,000 others, aged fourteen and fifteen, whose hours of labour will be reduced. In the South, for example, more than 20,000 children who are working eleven hours a day will then work only eight hours. These circumstances indicate the necessity that the State Legislatures shall take some action to meet this dire situation. The total number of pupils attending the public elementary schools is about eighteen millions, with an approximate annual expenditure of a hundred million pounds sterling. The Southern States spend on education less than a quarter of the expenditure per head of the population of many Northern States.

PROF. DAVID SNEDDEN addressed the History Teachers of the Middle States and Maryland on the subject "History and other Social Sciences in the Education of Youths Twelve to Eighteen Years of Age." His notes are reproduced in *School and Society*. History teaching at present aims almost wholly and exclusively at the memorisation of highly concentrated verbal statements of historical facts and generalisations of almost encyclopædic extent and variety.

There is no suggestion as to the actual functioning of this concentrated verbal knowledge in the culture and social capacities actually required of the citizen living and co-operating in a twentieth-century democracy. Rare teachers of exceptional ability in history have an almost magical capacity of making the past live in the present, but it is a mistake to assume that teachers in general ought to be equally able to interest their pupils. In history there are areas which present great difficulties to the minds of well-informed adults; children, of course, can painfully acquire a verbal grasp of the compressed descriptions which form so large a portion of the history texts; yet, on the other hand, there are endless materials suited to the learning capacities, natural or constrained, of groups of children of all ages and conditions. The methods adopted by the rare teachers will be suggestive, but methods adapted to teachers of good average ability will still have to be devised and tested.

#### SCOTTISH.

THE secondary-school pupils are once more free from the incubus of the leaving certificate examinations, which have weighed them down since the beginning of the session. In a well-ordered educational system examinations should figure merely as an incident in the school course, but in Scotland the leaving certificate examinations fill the whole educational stage. Teachers and pupils alike bow down and serve them, and the whole current of secondary-school life sets strongly towards them. The position is thoroughly unhealthy, and all are agreed that something must be done to break down their dominance, but no commonly accepted plan for doing so has yet emerged. The papers set this year were on the whole extremely fair, especially in the higher grade. In the lower-grade papers no endeavour seems to have been made to temper the wind to the shorn lambs of war-times. The questions set were in every case quite up to the old standards, and in one case, English, were altogether beyond the capacity of the pupils. Doubtless the standard of pass will be lowered to bring out the same percentage of successful candidates as in previous years, but that will not remove the feeling of soreness and injustice in the minds of the teachers and pupils affected.

THE Government has once more given evidence of its utter disregard of Scottish sentiment and feeling. In the new Reconstruction Committee, as in the old, there is not, so far as we know, a single Scotsman, and certainly no Scotsman with any pretence to a knowledge of Scottish educational conditions. Scottish members of Parliament, who should be the first to resent this public flouting of themselves and of their country, remain silent and apathetic. Last session they offered a spirited resistance to the Government's neglect of Scottish interests, and obtained a few minor concessions; but this year they have completely effaced themselves, and accept every rebuff with becoming meekness. The Educational Institute has entered a vigorous protest against the action of the Government, and has appealed to the Scottish

members of Parliament to take instant action to guard the national interests.

THE vexed question of the war bonus to teacher Edinburgh, to which reference was made last month at length been settled. Teachers have gained their main point by the Board withdrawing the clause requiring applicants to make an eleemosynary appeal to the schools' committee. Edinburgh teachers may be congratulated on the successful stand they have made against an attack upon their professional status. The action of the School Board in persisting so long with the hated clause has greatly disappointed friends. Edinburgh School Board has a long honourable record behind it. Its scale of salaries gives a lead to the rest of the country; its conditions of service are not unduly onerous; and its relations with its teaching staff have in the main been distinguished by confidence and friendliness. The board's sliding of one with such a creditable record has had a grievous blow to all friends of education, and it is hoped that this single lapse from virtue does not portend a retrogression of Edinburgh to the ordinary school board type.

AT the recent meeting of the Joint Board of Examiners of the Scottish Universities it was resolved to make English a compulsory subject of examination for all candidates from the colonies and dependencies. Hitherto such candidates have been admitted if they satisfied the requirements for admission to approved universities in their own country. It has been found however, that many students thus gained entrance to the university who were unable to profit by the study there owing to their ignorance of English. To prevent hardships to candidates who were reckoned to be unable to benefit by the study of English, the Board agreed not to make the new regulation operative until the beginning of the academic year 1919-20.

ON the invitation of the School Board of Glasgow a conference of school board representatives was held in Glasgow to discuss the educational interests of the country. The Rev. Dr. Smith, Partick, presided over a large audience, and the proceedings, though protracted, are said to have been harmonious. That might well have been the case, as the conference refused to face questions on which there were known to be differences of opinion. The following resolutions were agreed to: (1) That the legal school age should be increased from five to fourteen without exemptions; (2) that larger administrative areas for educational purposes should be set up, and that the authority should be *ad hoc* as at present; (3) that improved standards and salaries should be given to teachers; (4) that there should be compulsory attendance at continuation classes up to seventeen years of age.

TEACHERS of all ranks are at last awakening to the fact that improvement in their conditions can only come from their own united and persistent efforts. The profession is alive to-day as never before, and is determined to wring from the niggardly educational authorities greatly improved salaries, better conditions of service, and a real participation in directing the

educational system of the country. As one of the steps towards this, they have resolved to form a great professional fund to be used for both offensive and defensive purposes. Local authorities, who view the awakening of teachers with fear and suspicion, do not hesitate to call the new fund a "strike fund." But teachers are not to be daunted by any of the old conventions. They declare quite frankly that if necessary the fund will be used for strike purposes, but they also maintain that if the fund is big enough there will be no question of a strike, which they regard as a policy of despair. Of one thing they are absolutely confident, that the seething unrest in their ranks will not subside until they have been granted an honourable place alongside the other professions.

The report of the Carnegie Trust for the year 1915-16 shows that the operations of the trust continue to be seriously affected by the war. The number of student beneficiaries is only about half the usual complement, while the ranks of the research fellows and scholars have been greatly depleted. Notwithstanding the adverse conditions, much valuable work seems to have been done by the research department. In the physical and chemical sections the investigations have been concerned not so much with questions of purely scientific interest as with problems having a direct bearing upon war operations. It is pleasing to find the trustees able to report that important scientific and technical assistance has been rendered to the nation through these investigations. In the historical and linguistic section the work of one of the fellows, Miss Mayburns, comes in for special mention. Her thesis on "The Language of Alphonse Daudet" gained for her a Doctorate of Letters from the University of Paris, with high commendation for originality and research. On the financial side, the transfer of the original U.S. Steel Corporation bonds into War Loan stock has resulted in an enhanced capital of £367,000. The reserve fund has also been increased, and now stands at a quarter of a million.

In a prefatory note to the report, the secretary, Sir W. S. McCormick, pays a short but finely phrased tribute to the first chairman of the trust, the late Earl of Elgin. The universities of Scotland stand indebted to him for invaluable service. For fifteen years his main interests have been centred in the affairs of the trust, and he exercised a most faithful oversight of all its manifold activities. The selection of Lord Balfour as his successor in the chair has been universally approved, as he showed an intimate knowledge of educational questions during his tenure of the office of Secretary for Scotland.

#### IRISH.

THE Birrell grant of £40,000 was paid to the schools through the Intermediate Education Office at the end of March. No new conditions have been attached to its payment, in spite of warnings issued by the Government authorities that this would be done if the existing conditions were not observed. The Assistant-masters' Association protests against this, on the ground that it was intended by the grant

to bring the salaries of a specified number of lay assistant-teachers up to a certain annual minimum, and unless this is done, the grant is failing of its proper effect. It is regrettable that this should be so, and no adequate educational reason can be assigned for it; but in view of a registration scheme for intermediate-school teachers being shortly adopted, the Government probably prefers to adhere to the temporary conditions for the present. Meanwhile there is no doubt that the grant has been of the greatest benefit to assistant-masters generally.

WE announced in these columns two or three months ago that the registration of intermediate teachers would come into force this summer, and that applications for registration would be able to be made immediately after Easter. This was generally understood to be the case, as it was affirmed on good authority that the Lord-Lieutenant had approved the rules proposed by the Registration Council. It now appears that, although not so stated at the time, this approval was provisional. The rules have been submitted by the Lord-Lieutenant to legal opinion, and certain suggestions have been made by the lawyers and referred to the council for consideration. This will certainly delay the publication of the scheme and the date when it will become operative. The Act of Parliament containing the provision for registration assigns to the Registration Council the duty of framing regulations for the register, and states that the Intermediate Education Board shall form and keep the register in the manner prescribed by the regulations. The wording of the Act is not so precise as one would desire, and it may take some time to adjust the relations of the council and the board.

A CONSIDERABLE number of schools in the north of Ireland have signed a memorial to the Intermediate Board asking that the rule prescribing a written examination for pass students in experimental science should be withdrawn.

THE Education Estimates for the year 1917-18 for Ireland of money paid by the Exchequer are: For national education £1,818,018, for intermediate education £40,000 (the Birrell grant), and for science and art £152,218.

CONFERENCES have been held this spring in Dublin on "The Industrial Education of Apprentices" between the Technical Education Committee of the City of Dublin and representatives of the Department of Agriculture, the Board of National Education, the Chamber of Commerce, the Dublin United Trades' Council, and several employers' associations. The heads of consideration were: (1) The desirability of inaugurating day trade courses in the technical schools and the practicability of facilities being given by the employers for apprentices to attend these classes; (2) the advisability of fixing a minimum standard of education before a boy begins his apprenticeship; (3) the question of asking the National Board to give prominence to manual instruction in the primary schools; (4) a proposal to ask the National Board to give leaving certificates to boys who have gone

through the sixth standard, such certificates to be accepted as evidence of fitness for trade classes; and (5) the promotion of increased interest in the technical schools on the part of employers and trade societies. Mr. Fletcher, of the Department, outlined a suggested scheme for encouraging day classes. The conference was considering the matter of time being allowed off for apprentices to attend classes in the daytime, and his idea was that scholarships might be awarded on competition to boys who were apprenticed, on condition that they attended day classes for eight hours a week. The Department might consider such a scheme of scholarships if the employers were prepared to give it a fair trial. A sub-committee was appointed to consider the proposal.

#### WELSH.

THE University Commission continues to receive evidence, and the first volume of its report is expected to be published shortly. There seems to be a great fear in the minds of certain Welshmen that the Commission may recommend the placing of control over Welsh University matters in the hands of a few people drawn chiefly from Whitehall. This idea has been repudiated on the part of the Commission, which is, in any case, of course purely advisory. A conference recently held at Shrewsbury appointed a committee to draw up a scheme which should at once conform with the wishes of the Treasury as to the reorganisation of the University and also "meet the wishes of the people of Wales for a really national system of higher education." The conference is to meet again, and witnesses appointed by it are to lay the committee's views before the Commission.

ONE thing is certain, that if "a national system of higher education" means a university dominated by representatives of local authorities, whose chief qualification for their work is that they have been elected on the strength of their local patriotism—a university with complicated and accommodating degree schemes, claiming to be a thing apart and supposed to be doing a work different from that of similar institutions, because in some mysterious way the Welshman is not as other men, and therefore claiming to stand aloof from the comity of British universities, and declining co-operation and comparison with them; if this is the meaning of the phrase, then the Welsh University must continue to receive from the outside world less respect and consideration than are due to it for the character and standard of its work.

THE provision of adequate facilities and encouragement for Welsh studies is a different and most important matter, and one in which the University will naturally be expected to take the leading part. The Central Welsh Board, in its evidence before the Commission, suggested that the University was not sufficiently encouraging the study of the Welsh language. The governing body of Bangor University College protested, and Sir Henry Lewis, in proposing the resolution of protest, criticised the action of the Central Welsh Board in several respects—its apparent intention to make Welsh compulsory for all matriculants and their supposed desire to require a knowledge

of it from all teachers in Wales; to restrict Welsh professorships to Welshmen; and to provide for, presumably to attract to the colleges, monoglot Welsh students. Alderman the Rev. D. H. Williams, chairman of the Board's executive committee, has written to the papers rebutting these criticisms, and justifying the Board's statement by quoting figures to show that, while 40 per cent. of the pupils in intermediate schools studied Welsh, only 12 per cent. of the university students did so.

THE bonuses intended to meet the extra expense of living caused by the war are not considered satisfactory by teachers in any part of the country. They do not approach the amounts granted to railwaymen and the railwaymen are even now asking for more on the ground that what they have received does not enable them to live. The teacher is steadily growing poorer, while the munition-worker, the artisan, the farmer, and the tradesman are each engaged in seeing that whoever suffers by the war, he loses as little as possible of his profits. Much is hoped from Mr. Fisher's proposals, but unless the position of teaching is much improved meanwhile, they will certainly choose their own means of safeguarding their own interests after the war. Already the shortage of teachers is serious; the director of elementary education for Monmouthshire lately complained that 2,000 men had joined the Colours, and sixty women had gone to banks and munition works, so that the work of carrying on the schools was becoming increasingly difficult. Of course, many returned soldiers will now again take up the work of teaching, and the supply of young teachers is automatically cut off by the military authorities. Certain authorities are said to be taking measures to attract wounded soldiers into the profession; this is good, so long as it does not degenerate into a means of getting a supply of cheap teachers. There are signs in the advertisement columns of the newspapers of attempts to get returned officers into private schools—"state salary required."

THE trustees of St. Deiniol's Library, Hawarden, are offering ten readerships to men teachers in elementary and secondary schools in Wales; the offer, which applies to the year July 1st, 1917, to June 30th, 1918, includes three weeks' board and residence, with railway fare at the beginning and at the end of the time. Application should be made to the warden of the library.

IT is intended to hold the Barry Summer School as usual this year, and the Glamorgan County Council will hold courses in mining and in mechanical and electrical engineering at Swansea Technical College in August. The fee for each course of three weeks is £2 10s., but scholarships are offered as well as fees for the Summer School, which lasts four weeks. Applications should be made to the chief education official, Glamorgan County Hall, Cardiff.

THE Rev. D. F. Davies, who was at that time curate of Llangollen, volunteered for service early in the war, served for eighteen months as chaplain at the front, and was then appointed to the Rectory of Weston Rhyn. He has volunteered to do the work of Lieut. F. W. Phelps, who was classical master of

angollen County School, during the latter's absence in service. The present curate of St. Collen's Church, the Rev. Bruce Wilson, is also working in the same school.

THE Cardiff High School inquiry is still going on, and promises some interesting developments. Five teachers in the town have been requested to send in their resignations for refusing to sign a declaration that they were not opposed to military service.

THE Welsh colony in Patagonia has a secondary school with more than fifty pupils. The head boy of the school is a grandson of one of the original founders of the colony, and has a sister who is a student at Cardiff University College.

RHONDDA teachers have contributed £2,034 to the war fund of the N.U.T.; this sum has been raised by a voluntary levy. Teachers and pupils together have also sent £554 to the Netley and other hospitals, and £623 to the Y.M.C.A. and other war funds, besides raising £1,714 by means of flag days. There is also a gratifying response to the appeal of the secondary-school teachers' war fund.

### THE LATIN PERIOD.

(1) *First Rules for Latin Prose, with Hints and Examples.* By T. C. Weatherhead. Large 8vo double folding card. (Cambridge University Press.) 2s. net.

(2) *Biennium Latinum: a Translation and Composition Book for Beginners.* By T. C. Weatherhead. xii+145 pp. (Cambridge University Press.) 2s. 6d. net.

(3) *Further Rules for Latin Prose.* By T. C. Weatherhead. xii+108 pp. (Cambridge University Press.) 2s. net.

(4) *Exercises on Rules for Latin Prose.* By T. C. Weatherhead. ix+192 pp. (Cambridge University Press.) 2s. 6d. net.

(5) *In Caesarem Gulielmum Oratio.* By Douglas Remond. 11 pp. (Heffer, Cambridge.) 2d.

In the first four of these we have the whole apparatus for training a boy right from the beginning up to the stage of writing what is (so strangely!) called continuous Latin prose. They consist of the usual things and have been used for some time, as privately printed, in several schools; the chief claim which Mr. Weatherhead himself makes for them is an improved arrangement of the order in which the main Latin constructions should be taught. We are willing to grant him this, though we fail to see much difference from what we know from personal experience to have been the custom of many enlightened teachers already. What strikes us most is the momentous amount of preparation which seems necessary to train a boy to write the Latin period. Are not we ourselves sadly at fault? If we train a boy for two years (!) on such things as "They will leave the native-land that blames them" (we quote at random from "Biennium") we ought not to be surprised that it needs another two fearful manuals to get him to write "continuous Latin prose."

Let it be said at once that Mr. Weatherhead's manuals are excellent in every way for the plodding method of teaching for which they have been devised, but the advent of the whole four at once has done more to convince us that such a method is wrong than anything else could have done. Mr. Weather-

head himself seems to have been a little bit impressed, but, just as the enemy when hard pressed summons up all his reserves, he turns his back stubbornly upon modern methods with the remark: "As a good many teachers still prefer to teach Latin on lines which are not those of the 'Direct Method,' I venture to hope this little book may find acceptance with some of them," and therewith unloads the four upon us.

Our No. 5 is a piece of "continuous Latin prose" which has been published as a plea for the direct method of teaching Latin. It is by a boy of fourteen, written after three years' study of Latin, by which time he would, on Mr. Weatherhead's method, have been half-way through our No. 3. On p. 82 of this Mr. Weatherhead begins his instruction upon the Latin "period." We are told to "read through a continuous piece of English, and decide whether there is a real connection between two or three consecutive sentences, whether one person is clearly the subject throughout, and so on. Then, having decided which must be the principal verb (naturally that which gives the action which comes latest), remember that all other principal verbs in the English must be 'side-tracked' into subordinate clauses. Such clauses will occur in their chronological order, expressed by participles (esp. abl. abs.), *cum* with subjunctive, *postquam* and *ubi* with indicative; and, of course, any other sort of clause required for the meaning can occur, such as final (purpose), consecutive (consequence), relative, causal, concessive, conditional." All of which is very true, but we conjecture that it is not the method by which the young author of (5) learnt to write the following:—

"Vos oro, patres conscripti, ne omnes qui in bello pro patria, pro liberis, pro religione, pro populorum libertate, pro totius denique orbis terrarum salute suscepto, impavidi perierunt, inultos esse sinatis, ut morientium supplicibus, viduarum et lugentium vocibus aures adferatis, ut hunc, qui ne bellum dicam, latrocinium enim potius quam bellum nominaretur, tam crudeliter gerebat, poenas meritas ac iustas solvere cogatis."

Space forbids us to quote at greater length, but anyone who will compare these five books will agree that teachers will sooner or later have to give up the attempt to teach the Latin "period" as though it were a jig-saw puzzle in favour of the more enlightened way of teaching the Latin language (including the "period"!) as though it were a language.

### AMERICAN SPEECH.

THE numbers of the *English Journal* as they have appeared have been noticed in THE SCHOOL WORLD, and attention has been directed to many striking and interesting articles. The January, 1917, issue is before us, and it invites a rather longer notice than is usually given to a magazine. The first paper is by Mr. Fred Newton Scott, and is entitled "The Standard of American Speech." The writer seems to us to mistake *in toto* the meaning of our general objection to what we understand by American speech. Mr. Scott begins by quoting Mr. Henry James; let us turn to this author and quote a few sentences also. In an address uttered so late as 1905 and delivered before students in Pennsylvania, Mr. Scott spoke as follows:—"No civilised body of men and women has ever left so vital an interest to run wild, to shift for itself, through mere adventure and accident in the dust of life, to pick up a living by the wayside and the ditch. Of the degree in which a society is civilised, the vocal form, the vocal tone,

the personal social accent and sound of its intercourse, have always been held to be a direct reflection. That sound, that vocal form, the touchstone of manners, is the note of its having in one poor imperfect human degree achieved civilisation. Judged in this light, it must be admitted our civilisation remains strikingly unachieved. . . . The last of American idiosyncrasies, the last by which we can be conceived as represented in the international concert of culture, would be a pretension to a tone standard. Other nations have a tone standard; we alone flourish in undisturbed and something like sublime unconsciousness of any such possibility. America makes a care for tone impossible."

Thus Mr. Henry James in a paper which should be reprinted by itself; and, though we have quoted the very mildest part of his utterance, he seems in these words to have hit the nail on the head. The *English Journal* does not appear to know that British objection to American speech has little to do with slang. American slang in its proper place is about the best poetry America possesses. Nor is the objection concerned with slight peculiarities of syntax, which as often as not are racy as the slang is. It is not a matter of vocabulary, of dialect, or of idiom. England, as everyone knows, allows large margins in the matter of dialectal peculiarities, idiomatic and other peculiarities, to pass muster as accepted English, although the vagaries of fashion can scarcely be accounted for. But the American tone, the twang, the intonation-wave and curl—the most general and accepted hall-mark of States and Canadian speech—this is what all lovers of America on "this side" would like to see changed. The origin of it is shrouded in mystery, some authorities holding that it is due to climate, some attributing it to Puritan or Roundhead ancestry, and one authority at least maintaining that it is a legacy of the Red Indian, to whom in the matter of craniometrics the modern American is slowly approaching. The present writer has tried in vain to get a pronouncement from phoneticians on this motor-horn voice, and puts forward tentatively the suggestion that the States have invented it by tensing the walls of the larynx and those of the resonance-chambers—and that it is the mark of America of which America herself is most proud. Miss Dora Jones, writing as an American on the technique of speech, is emphatic in her condemnation of her countrymen and countrywomen; and while no writer on speech wishes to attack a natural development, it does seem to us that if the *English Journal* of Chicago is going to take up all sides of the language it might do worse than institute an inquiry into the origin, beauty, and meaning of the American twang. We hope this word "twang" will not offend, but, really, there is no other.

To put the matter quite plainly, the Britisher cannot bring himself to believe that the cultivated American who writes English so well can find beauty in the wave and the timbre which, in nine hundred and ninety cases out of a thousand, are the cherished possession of the American man—and woman.

It is perhaps unnecessary to add that this voice exists, sporadically, wherever English is spoken. It is usually called nasal, but nasality does not explain it, and "unpleasant" and "unpleasing" are vague terms.

Another paper in this issue is devoted to punctuation, and it is to be hoped that this matter will not be dropped, for any body of teachers or publishers who would reform our printed punctuation would deserve well of the reader. It is too much to hope for the destruction, root and branch, of the foolish apostrophe—this, perhaps, is a work for a reformer in spelling—but the inverted comma deserves very

short shrift. This *novus homo*, unknown to the Bible, spoils the beauty of every printed page. The ordinary comma is not much better. Every teacher of reading knows that punctuation has as little to do with really good reading as pronunciation has. While the latter in its place is all-important, the former is continually encroaching, dictating to us from no one knows what source, and peppering our pages with dots worse than those of decimals.

A. B.

## A PRACTICAL PHILOSOPHER.

*Epictetus: The Discourses and Manual.* Translated by P. E. Matheson. In 2 vols. 24s and 28s (Oxford: Clarendon Press.) 3s. 6d. net each.

THE life of Epictetus is itself a good commentary upon the superiority of the things of the mind over those of the body; he was a Greek slave (and a lame one too) who lived under the early Roman Empire, but he has a message for us to-day. There have been many English translations, one in the eighteenth century by the learned Elizabeth Carter and another in the nineteenth by George Long. But Epictetus is an excellent author to be translated, for he loses nothing in the process. The English reader who goes through these volumes is in as good a position to know him as Epictetus as the Greek student who peruses the original. We have compared the translation with the original, and it is both more scholarly and literate than Carter's, and less like a "crib" than Long's. In fact, the English reader owes a great debt of gratitude to Mr. Matheson for having produced such a very readable translation.

There is little in Epictetus that is not in Plato or Aristotle, and many of us would give the whole of him (or all that Arrian has preserved for us) for say, the "Apology" of Plato. It may be that Epictetus was not so fortunate in having Arrian for his pupil as Socrates was in having Plato; but certainly whether it be his own or Arrian's fault—we miss him the humanity of Plato. The interlocutors not being named increases the impersonal element, an impression which is not banished even by the entrance of so mighty a person as an Epicurean commissioning into the lecture-room. But Mr. Matheson's translation does a great service in bringing home to us the fact that philosophy is not an affair of the study, but a way of life. Who cannot feel the reality of a precept such as this (given in Rome at such a time): "Serve Cæsar so long as he requires nothing unreasonable; if he requires more, give up the game!" And what could be better than the definition of beauty as consisting in the fulfilment of one's nature? Good practical precepts abound, and many may find comfort in these days by reflecting upon them. The "common sense" of it all could not be better illustrated than by the following from the "Manual": "Every thing has two handles, one by which you can carry it, the other by which you cannot. If your brother wrongs you, do not take it by that handle, the handle of his wrong, for you cannot carry it by that, but rather by the other handle—that he is a brother brought up with you, and then you will take it by the handle that you can carry by."

Mr. Matheson has prefixed to the first volume an excellent introduction on the age of Epictetus, his relation to Stoicism, his psychology, and his general ethical philosophy. It is a good *synopsis*, and if a little "unreal" at times, that is the fault of his subject and not of Mr. Matheson. We read in the preface a hope that the preaching of one who asserted

man's spirit may have a peculiar appeal in these days when "might is right" is being thrust so much before us, and we think that many will agree with, and be grateful to, Mr. Matheson. But most students still prefer to read and read again their favourite assages in Plato rather than toil up the steep hill of virtue along with Epictetus. For so much does the warmth of personality count.

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*Middle High German Primer.* By Joseph Wright. 1-213 pp. (Clarendon Press.) 4s. 6d. net.—The first edition of this book was issued in 1888, the second in 1898, and now we are able to greet the third edition, revised and enlarged. The grammatical introduction has been re-written and expanded to more than twice its original size. The texts also have been nearly doubled by the welcome addition of eighteen poems from Walther von der Vogelweide, and selections from Reinmar, Ulrich von Lichtenstein, and Wolfram von Eschenbach; the various aspects of Middle High German literature are therefore much better represented than before. From every point of view this convenient handbook has been greatly improved, and may be warmly recommended to those who seek a simple and pleasant introduction to Middle High German.

### Classics.

*A Greek Reader for Schools.* By C. E. Freeman and W. D. Lowe. iv + 142 pp. (Clarendon Press.) 2s. 6d.—This is the best Greek reader we have seen for many a year. It begins with eight simple stories from Aesop, then come three pages from Theophrastus admirably selected, and much more interesting for boys than we should have thought), five pages from Lucian, and then the main body of the book adapted (generally with very little change indeed) from Herodotus, Thucydides, and Plato. What is so pleasing about the book is that the extracts are not "scrappy." The boy who reads these will be able to get quite a good idea of these three Greek authors. For those who do not get their classes on to a continuous Greek author in the second year we can imagine nothing more admirable than this little volume. There are a Greek-English vocabulary and twenty pages of notes, which almost form a model of what is required in a school edition. There is a misprint in the accentuation of *vñ* on p. 3, and a *re* on p. 38 which ought to have been omitted in the adaptation. And these are the only faults we can find! We thoroughly recommend the book to all who have at heart the successful teaching of elementary Greek.

### English.

*The Book of the Epic.* By H. A. Guerber. 631 pp. (Harrap.) 10s. 6d.—The great epics of the world have been dealt with for school purposes again and again separately, but they have not, so far as we know, been put together and retold in one volume. Here an ambitious attempt is made to tell the story of the following:—"The Iliad," "The Odyssey," "The Eneid," "The Cid," "The Lusiad," "The Divine Comedy," "Jerusalem Delivered," "Beowulf," "The Faerie Queene," "The Arthurian Cycle," "The Niebelungenlied," "The Volsunga Saga," "The Shah-Namah," "The Ramayana," and "The Kalevala." Even this long list does not exhaust the book, for "Hiawatha" and "Aucassin," "William Tell,"

"Robin Hood," and the work of Milton, along with some exotic and unknown work, are briefly outlined. The critic will at once ask why "Aucassin" is included and "Joseph" left out, and will perhaps complain that the reader is really left without a preface, in which the term "epic" might have been defined, and the relation of epic to other branches of poetry established; still, as the book is for the younger reader, these vexed questions are no doubt omitted with definite intention. The telling of the various stories is done in plain and pleasant prose, never rising, as Lamb's does, to that charm which is only gained when the original work is closely but unobtrusively quoted. The translations from the books are well chosen and are many, most of the versions being taken from standard translators—Lord Derby, Cotterill, William Morris, Ormsby, Cary, Hall, Lettsom being freely called on. The illustrations are by artists known and unknown, and are lavishly strewn through the book. They are of varying merit, and while most of them will delight, one will probably excite unintended and unholy laughter in the school. But, after all, the book's the thing, and it is as a reference and reading book and as a guide to the stories of the world that it will be valued. The author is already known by his "Myths of Greece and Rome" and by his studies in the Middle Ages.

*Jataka Tales.* Edited by H. T. Francis and E. J. Thomas. 488 pp. (Cambridge University Press.) 7s. 6d.—The birth tales of Buddha have been collected and edited before, and Max Müller's name, to mention no other, is associated with the best-known attempt to interest the English reader in these quaint mixtures of worldly prudence and religious teaching. The general reader refuses to be enthused, but to the folk-lorist the problems surrounding the tales are important. The learned editors in a preface all too short show that the tales are rooted in Brahmanism, and thus the old question is re-stated: Where did early India, or, for the matter of that, any country, get its folk-tales from? Old friends meet us in the index: Psyche, the Queen of Sheba, Androcles, Jason, and the tar-baby story; but we miss Gelert, which has been traced back to 500 B.C. at least. The translation appears to be admirable, though the 1814 edition of "Bidpai," now reprinted in a cheap form in Cairo (we make a present of this information to all lovers of the fable in a beautiful dress), seems to get nearer to the Eastern form of thought. The book is not *virginibus puerisque*, but few Eastern books are. The illustrations taken from the carvings of the Bharhut Stupa are admirable. A few notes explain where, in well-known collections, variants may be found, but the reading world still waits for further information regarding the streams of story; even the newer edition of Dunlop does not suffice. A curious misprint (p. 381) connects Blondel with Richard III., a most unmusical monarch.

### History.

*Johnston's Historical Atlas.* New and revised edition. (Johnston.) 2s. net.—Since the issue of the edition of 1911 the size and appearance of this well-known and inexpensive historical atlas have been radically changed. Its pages are now quarto instead of octavo, and many of the maps are new. The increase of size means a great improvement in the matters of clearness and legibility. The period of history covered is A.D. 395-1815; prime emphasis is laid on maps illustrative of English history, but the contemporary history of Europe is also kept well in view. There are in all forty maps and plans, twenty-four of which are in colours. The value of the atlas is en-

hanced by the inclusion of concise historical notes, together with a chronological table of national events. There is also a full index of names.

*Germany's Lost Colonial Empire.* By J. H. Harris. viii+88 pp. (Simpkin, Marshall.) 1s. net.—Just one hour is required to read this rapid but well-written sketch of the rise and fall of Germany's ephemeral and never-prosperous overseas empire. The hour is well spent, for the story is instructive as well as interesting. It is, moreover, important, since the fate of the German colonies is one of the problems which will have to be settled at the end of the war. Mr. Harris makes it abundantly clear that Germany has shown a gross moral unfitness to have a colonial empire at all, that she has ill-treated the natives, and has exploited their territories for her own exclusive benefit. The return of South-West Africa and the Pacific Islands is, in any event, he concludes, wholly unthinkable. This sketch may be commended to the notice of all who have not the leisure to read the larger works of Mr. A. E. Calvert and Mr. Giordani.

*Lord Kitchener: His Life and Work.* By Donald A. Mackenzie. 160 pp. (Blackie.) 1s.—Although the time has not yet come for a critical estimate of Lord Kitchener's career, more than enough is known of his fine character and great achievements to warrant the publication of a brief sketch such as the one before us. In sympathetic spirit and with much literary skill Mr. Mackenzie describes Lord Kitchener's early days; relates his experiences in Palestine, Cyprus, Asia Minor, and Egypt; tells the story of his South African campaign; and finally indicates, as clearly as is possible at present, the magnitude of his task and the extent of his accomplishment in connection with the still unfinished war. Ten photographs of Lord Kitchener at different ages materially enhance the interest of a very attractive and impressive biography. The book deserves a wide circulation. It cannot fail to stimulate patriotism and a sense of public duty.

(i) *The Printed Book.* By H. G. Aldis. 154 pp. (ii) *The Evolution of Coinage.* By G. Macdonald. viii+148 pp. (Cambridge University Press.) 1s. 3d. net each.—These two scholarly and interesting volumes are well worthy of the excellent series of Cambridge Manuals to which they are the latest additions. Mr. Aldis begins his sketch with the advent of printing. He then traces the spread of the art and describes the development in book-making, particularly in England, during the sixteenth and following centuries. Next, he deals with some of the fine products of the modern printer's skill, such as the books produced by the Kelmscott Press. Finally, he treats of the construction of a book, kinds of type, modes of illustration, varieties of binding, and so on. No lover of books can fail to find this little volume both fascinating and useful.

Dr. Macdonald, the learned curator of the Hunterian Coin Cabinet in Edinburgh, provides an authoritative summary of the history of coinage from the earliest days down to the present time. Seven plates of photographic reproductions of typical coins render the little-work doubly valuable to beginners in the science of numismatics.

*A Sketch of the History of Polish Art.* By J. Holewinski. 42 pp. (Polish Information Committee: per Allen and Unwin.) 6d. net.—The Polish Information Committee is doing good service by bringing to the notice of English readers in a series of inexpensive pamphlets some of the leading features of the inextinguishable national life of the Poles. Though their territory has been partitioned, and though they them-

selves owe allegiance to alien monarchs, they still literature and music, in science and art, remain united and self-conscious nation. The brief sketch Polish art which lies before us emphasises this very strongly and effectively. In the Middle Ages art-guilds of towns such as Cracow and Poznan produced work which manifested a peculiar and distinct national character. Similarly, in the nineteenth century, in spite of political disintegration, Polish painting had features all its own.

#### Geography.

*Philip's Comparative Wall Atlases.* World-relations. Edited by J. F. Unstead and E. G. R. Taylor. Eight maps. Mounted as a wall atlas with roll explanatory handbook. (Philip.) 21s. net.—This can be little but praise for this set of maps on world-relations when they are used for individuals or small class, say of ten to fifteen pupils. The maps show, for the whole world at a time, relief, political divisions and communications, climate November April, climate May to October, January and July temperatures, annual rainfall and range of temperature with ocean currents in July, natural vegetation with ocean currents in January, and density population. This list of topics indicates the fact that there is an attempt to convey a large amount of information on eight sheets; and the maps themselves show that much of the information is conveyed in detailed fashion. The result is, as has been said, good for a small class, but experiment demonstrates that the facts and the details are overdone for ordinary class purposes; the children cannot see some symbols and cannot distinguish some of the colour shades. This is particularly unfortunate, as the maps are "intended for school use," and "all unnecessary detail has been omitted." We have found difficulty in teaching a large class from these maps, since the mere effort of trying to distinguish the symbols has in many cases exhausted the available energy of the slack pupils, but we welcome the atlas for revision purposes, since it places certain facts very usefully in juxtaposition.

*The Continents and their Peoples. Oceania: a Supplementary Geography.* By J. F. Chamberlain and A. H. Chamberlain. 160 pp. Coloured map and illustrations. (New York: The Macmillan Co.) 3s.—This supplementary reader completes the series to which it belongs, and falls into line with the preceding volumes and enriches the geographical content by what may be termed personal touches regarding the peoples of Oceania, such touches as are better read than spoken and as depend upon a profusion of illustrations like those this book contains. If it happens that the treatment appears slight, as in the case of New Zealand, this fact is due to the aim of the book, which is intended to supplement the formal lessons with blackboard and map.

*Bathy-Orographical Map of Eurasia.* Size 50 x 42 in. Scale 147 miles = 1 in. (Johnston.) 12s.—This new map is strikingly bold in its colouring and printing of railways and names. Two greens and six browns show the height of the land, and five blues the depth of the oceans. The net result is a pleasing and useful wall map.

#### Mathematics.

*Elementary Dynamics of the Particle and Rigid Body.* By R. J. A. Barnard. viii+374 pp. (Macmillan.) 6s.—This is a text-book of elementary dynamics that should be found useful in the upper forms of schools and by the junior students in university colleges. The treatment on the whole pro-

eds on familiar lines, but this does not preclude interest in the exposition of particular parts of the subject, and the book impresses one as providing a very clear and sound introduction to the science. No great demands are made upon the student's mathematical knowledge, and although free use is made of the fundamental ideas of the calculus, in those cases where an integration is effected, alternative algebraic methods are also given. The only cases of particle motion considered are those where the path is a straight line, circle, or parabola. We welcome the section on "Rigid Dynamics," for the problems here lie more within the student's actual experience than those in which a particle is concerned, and the difficulties of treatment are in a large number of important cases no greater.

### Chemistry.

*A Text-book of Thermochemistry and Thermodynamics.* By Prof. Otto Sackur. Translated by Dr. E. Gibson. xvi+439 pp. (Macmillan.) 12s. net. The merits of Sackur's "Thermochemie und Thermodynamik" have been known to many in this country since its first appearance three or four years ago (the reviewer has used it regularly for teaching purposes), and it is a matter for satisfaction that it is now available to a wider circle in the form of Dr. Gibson's translation. The chief subjects treated are: specific heat, equations of state, the first and second laws of thermodynamics, thermodynamic functions, phase rule, theory of solutions, the law of mass-action and chemical affinity, thermodynamics and electrochemistry, thermochemistry and capillarity, heat conduction, the Nernst heat theorem. It is by no means easy to give a clear and accurate exposition of the principles of thermodynamics and thermochemistry, and it is doubtful if the task has ever been accomplished more satisfactorily than in the book before us. In a few chapters advanced mathematics are used, but many chemists will be glad to know that the most important chapters are readily intelligible to those who are not equipped with a knowledge of the calculus. A most valuable feature, which greatly facilitates the comprehension of the principles involved, is that all the important formulae are illustrated by numerical examples. The translator has done his part of the work very well. The book is well printed and well turned out. It can be unreservedly commended to students of physics as well as of chemistry.

*Chemistry for Beginners.* By C. T. Kingzett. 12 pp. (Ballière, Tindall, and Cox.) 2s. 6d. net.—This book, which contains a good deal of information conveyed in a clear and simple style, may be of use to the general reader who desires to know something of the scope of chemistry, but as an introduction to the serious study of the subject it has marked defects. The general principles of chemistry are not well brought out, and there are a number of misstatements in fact. Thus nothing is said of Avogadro's hypothesis, the corner-stone of chemical theory, and no reliance is afforded for the assumption that the molecules of many of the elementary gases contain two atoms. The student who is told that the molecule of oxygen contains two atoms, and is written O<sub>2</sub>, and that of ozone three atoms, written O<sub>3</sub>, will be puzzled by the equation on p. 14, P<sub>2</sub>+O<sub>3</sub>=P<sub>2</sub>O<sub>5</sub>. On p. 26 we are told that, when magnesium burns in air, "it is the air which, acting as a vehicle, conducts the light from the burning metal to our eyes." NH<sub>3</sub> is not ammonium, as stated on p. 46. Air does not contain less than one-tenth of 1 per cent. of argon, as stated on p. 54, but rather less than 1 per cent. by volume.

*One Hundred Chemical Problems.* By E. Arthur Mason. 6 pp. (Bell.) 6d. net.—The problems are of the standard of university local and matriculation examinations, and are well chosen. No answers are given. Instead of 22.24 litres (p. 1) the gram-molecular volume should be taken as 22.4 litres, corresponding with the oxygen standard [O=16], used for years past in the International Table of Atomic Weights.

### Miscellaneous.

*The Schoolmasters' Yearbook and Educational Directory, 1917.* lxxx+424+712+188 pp. (The Year Book Press.) 15s. net.

*The Public Schools Year Book, 1917.* Edited by H. F. W. Deane and A. B. Evans. xxxi+813 pp. (The Year Book Press.) 6s. net.

Perhaps the most notable change in the fifteenth issue of the Schoolmasters' Yearbook is the prominence given to the part women now take in English education. Part i. of the Yearbook now deals with men and women alike, and we shall look forward next year to a further extension of this sensible similarity of treatment. We have often directed attention to the usefulness of this invaluable work of reference, and in our judgment the way in which the editor and publisher have overcome war-time difficulties entitles them not only to congratulation, but to the support of every school and teacher in the country. Personally we hope we may have for a long time the assistance of the Yearbook regularly year by year.

In this twenty-eighth edition of the "Public Schools Year Book" the Army and Navy sections have been brought up to date, full details of the work of the Teachers' Registration Council have been supplied, and the more usual data have been revised with care. It is an indispensable companion to the parents of public-school boys.

Some *Year Book Press* publications received recently include a number of interesting part-songs and canons suitable for girls' voices as well as a vigorous setting in unison by Sir Hubert Parry for the Clifton boys of Newbolt's "The Best School of All." Also included is a unique song book for young children, in which Christina Rossetti's quaint and pretty child verses have been set to music by a bevy of native composers of the calibre of Walter Alcock, Sir Charles Stanford, Sir Hubert Parry, Sir Alexander Mackenzie, Sir Frederick Bridge, and the like. The book begins at cock-crow with a spontaneous setting of Kookoorookoo, by Thomas Dunhill, which has a lilt and a spring that will take a child at once, and it ends with a beautiful lullaby by Dr. H. Walford Davies, with a very simple alto in thirds and sixths—all the other songs are in unison—which, like the swallow song, "Fly away, fly away over the sea," is written with the delicacy and charm of rhythmic figure and phrasing that are characteristic of his music for voices. The table of contents is unusual in that it is signed in autograph by each composer against his contributions; it is symbolic of the manner in which these enterprising and enlightened publishers have been helped in their endeavour to provide native music of real worth for our young people of to-day. There can be no better way of fostering a purer taste and a better appreciation of music in the next generation. It is to be hoped that the book will have a wide sale, and it should be noted that though the whole book, entitled "Kookoorookoo," costs 2s., and tonic sol-fa 9d., grouped items can be obtained separately.

*English Nursery Rhymes.* Edited by L. Edna Walter, harmonised by Lucy E. Broadwood, and illustrated by Dorothy M. Wheeler. 63 pp. (Black.) 5s.

net.—We have here one of those delightful books which make the grown-ups wish themselves in the new childhood into the service of which all the arts are now pressed. The illustrations are dainty and attractive in colour and design and wholesome in sentiment and humour. The decorative margins and vignettes, packed with quaint oddments, engaging cherubs, and funny animals, will provide hours of enjoyment to the happy possessor of the book, for every child loves to poke fingers into the corners and to pore over the details of a well-filled page. The tunes are the old tunes, harmonised and tricked out to catch the child's fancy, yet remaining simple enough for little fingers to play.

## EDUCATIONAL BOOKS PUBLISHED DURING MARCH, 1917.

(Compiled from information provided by the publishers.)

### **Modern Languages.**

"Third Russian Book." By Nevill Forbes. xii+192 pp. (Clarendon Press.) 2s. 6d. net.

Tolstoy : "Prisoner of the Caucasus." Edited by E. G. Underwood. (Oxford Russian Plain Texts.) 64 pp. (Clarendon Press.) 1s. net.

Franc-Nohain et Paul Delay : "Paris Menacé, Paris Sauvé." Edited by G. H. Clarke. (Oxford French Plain Texts.) 48 pp. (Clarendon Press.) 6d. net.

Victor Hugo : "Hernani." Edited by M. B. Finch and L. J. Gardiner. xi+116 pp. (Clive.) 2s. 6d.

### **Classics.**

"Further Rules for Latin Prose." By T. C. Weatherhead. xii+108 pp. (Cambridge University Press.) 2s. net.

"Exercises on Rules for Latin Prose." By T. C. Weatherhead. xii+192 pp. (Cambridge University Press.) 2s. 6d. net.

### **English: Grammar, Composition, Literature.**

Bright's "Anglo-Saxon Grammar." 76 pp. (Allen and Unwin.) 2s. 6d. net.

Scott : "Lord of the Isles." (Oxford Plain Texts.) 144 pp. (Clarendon Press.) Cloth, 10d. net; paper, 8d. net.

"How to Read." By J. B. Kerfoot. 294 pp. (Constable.) 5s. net.

"Tales Retold Series":—Junior section: "Mary and the Elves," 64 pp. Paper covers, 3d.; cloth covers, 4d. "Finola of the Fair Shoulder," 72 pp. Paper covers, 4d.; cloth covers, 5d. Senior section: "Big Cats," 72 pp. Paper covers, 4d.; cloth covers, 5d. "Rome and the Tarquins," 72 pp. Paper covers, 4d.; cloth covers, 5d. "Lorna Doone," 72 pp. Paper covers, 4d.; cloth covers, 5d. "A Journey to the Centre of the Earth," 80 pp. Paper covers, 4d.; cloth covers, 5d. "The Maid who Saved a Kingdom," 80 pp. Paper covers, 4d.; cloth covers, 5d. "Border Days and Border Ways," 96 pp. Paper covers, 5d.; cloth covers, 6d. (McDougall.)

"First Book of English Prose for Repetition." Chosen and arranged by J. H. Fowler. (English Literature for Secondary Schools.) viii+56 pp. (Macmillan.) 9d.

### **Mathematics.**

"Mathematical Papers for Admission into the Royal Military Academy and the Royal Military College, 1907-16." Edited by R. M. Milne. (Macmillan.) 6s.

### **Science and Technology.**

"A Short System of Qualitative Analysis: For Students of Inorganic Chemistry." By Dr. R. M. Caven. 162 pp. (Blackie.) 2s.

"Co-operation or Chaos?" By Maurice L. Rowtree. 112 pp. (Headley.) 6d. net.

"A Book about Potatoes." By Walter P. Wright (Headley.) 2s. net.

"British Wild Flowers: Their Haunts and Associations." By William Graveson. 336 pp. (Headley) 7s. 6d. net.

"Housecraft Science." By E. D. Griffiths. With many diagrams. 168 pp. (Methuen.) 2s. 6d. net.

### **Pedagogy.**

"Modern Language Teaching in German Secondary Schools." By Ethel Davies. 36 pp. (Clarendon Press.) 1s. 6d. net.

### **Miscellaneous.**

"The Coming of the World Teacher." By Dr. M. E. Rocke. 244 pp. (Allen and Unwin.) 2s. 6d. net.

"The United States and the War." By Gilbert Vivian Seldes. 148 pp. (Allen and Unwin.) 2s. 6d. net.

"Domestic Economy: A Text-book for Teachers and Students in Training." Part i., "Theory." By Marion Bidder. viii+168 pp. Part ii., "The Practice and Teaching of Domestic Economy." By Florence Baddeley. viii+190 pp. (Cambridge University Press.) 2s. 6d. net each part.

"Guide to the Registration of Business Names Act 1916." By Kenneth Brown. 51 pp. (Pitman.) 1s. net.

"A Typewriting Catechism." By Mrs. Smith Clough. 152 pp. (Pitman.) 2s. 6d. net.

"The Public Schools Year Book, 1917." (Year Book Press.) 6s. net.

"The Schoolmasters' Yearbook and Education Directory, 1917." (Year Book Press.) 15s. net.

## CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising an article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

### **The Secondary-school Teachers' War Relief Fund.**

MAY I ask your kind co-operation in bringing the notice of all readers of THE SCHOOL WORLD to the claims of the Secondary-school Teachers' War Relief Fund? The fund has now been in existence for more than six months, and the committee of management desires to express sincere thanks for the support already so generously accorded on many sides. Nevertheless, we have to appeal for a yet wider response; for while during the period under survey as much as £2,000 has been contributed, experience has shown that that sum is quite insufficient to meet current obligations for any length of time.

The definite object of the fund is to supplement pensions and allowances of soldiers, sailors, nurses and their dependents, so that the families of fallen and disabled secondary-school teachers shall suffer material circumstances to the least possible degree. The benefits of the fund are open to all secondary school teachers, irrespective of membership of an association.

The number of secondary-school teachers who have lost their lives is, alas! fast increasing, and many have left behind families or dependents who at

trailed with serious financial difficulty. The report recently issued by the committee shows that, apart from the distribution of emergency sums, the fund is already committed to an expenditure in annual rates of nearly £200. The following typical cases of the operation of the fund show how great is the need for help, if the families of fallen and disabled factors are to be maintained in the degree of comfort which they have become accustomed:—

**Widow.**—The husband's salary was £167 10s. per annum, with an expected increment of £20.

Five children, aged eight, six, four, two, and one year respectively. The widow received an insurance of £50 on the husband's death.

Total Government pension, £1 7s. per week. Application for supplementary pension advised. The War Relief Fund committee has given a grant of £2 5s. per week for the present.

**MOTHER AND BLIND SISTER.**—Mother aged sixty-six years. Totally dependent upon deceased son, who gave an allowance of £4 10s. per month.

Government pension of £40 per annum. The committee has given emergency grants amounting to £35, and proposes to increase the pension by £14 per annum.

**MAID MOTHER, AND SISTER ACTING AS NURSE.**—Total pre-war dependence on deceased son of £74 per annum proved by cheques. Small private income still inadequate for maintenance.

Government pension refused.

Case being taken before the statutory committee, the committee has made a grant of £6 6s. 8d. per week for the present.

The prolongation of the war, and the consequent increase in the number of teachers on active service, unfortunately make it certain that the demands on the fund will grow considerably. To ensure that the payments now being entered into shall be continued as long as may be necessary, it is essential that a large sum of money shall be raised in the immediate future.

The committee of management of the fund, which is composed of representatives of the majority of the associations connected with secondary education, therefore appeals to all interested in secondary education to assist to the utmost of their power in raising such a sum.

It feels with gratitude that it can count on the continued support of those who have contributed so loyally and generously during the past year, and makes an earnest appeal to all others to take their part in this noble work. Each one left at home leaves his safety and comfort to the men who face the dangers of the battlefield; and the common burden of providing for the dependents of those who fall in our country's service should be borne by all alike. Subscriptions and donations should be sent to the treasurer of the fund, Mr. J. Hart-Smith, the Secondary School, Latchmere Road, Battersea, London, S.W.11. Cheques should be crossed, and made payable to "The Secondary-school Teachers' War Relief Fund."

Guarantors will at once be notified if at any time the total guaranteed exceeds the amount necessary. Lists of contributions, etc., appear monthly in the *S.M.A.*, the official organ of the Incorporated Association of Assistant-masters in Secondary Schools, and the recently issued report and other particulars will be forwarded to any address on application.

G. D. DUNKERLEY,

Hon. Secretary.

Secondary-school Teachers' War Relief Fund,  
Registered War Charity,  
35 John Street, Bedford Row, W.C.1.

### The Teaching of English.

THE recent discussions in educational councils concerning the teaching of English in our secondary schools have, apparently, resulted in the "discovery," long since made in many of the schools themselves, that too little time is spent on the subject. But some of us, who have actually to teach it, are not assisted in the least by this piece of information, and look in vain for any practical suggestions for improving our methods of using the time we do get. It is in the hope of doing something, however little, to help in forming a definite theory of English teaching, applicable alike to low and high forms, that I venture to address this letter to you.

We shall not remedy the admittedly inferior standard of school English by demanding time where, if the truth be told, time is not; but does our difficulty really arise merely from lack of time? Is it not rather due to the fact that we have imperfectly realised the nature of the subject, and the object at which we are aiming in teaching it? For English is an extraordinarily elusive subject from the teacher's point of view, and one of its most subtle pitfalls is the attitude towards it which the schoolboy is prone to adopt. Many boys, undoubtedly, never do much with certain studies, because they convince themselves from the outset that they are incapable of understanding the work. But with English the contrary is the case; here students may fail because they start with the assumption that everything is easy, as they have to deal with a language which they speak and write—after a fashion—with mechanical ease. Some reformers, by abolishing grammatical instruction, have done their best to foster that fatal assumption, whilst literature is still treated as a class subject, and remains so much "work" to be done with as little trouble as possible—which is obviously a most undesirable idea.

We should have, then, two definite objects in view in framing a method of instruction in English. First, we have to convince the student that the subject is difficult enough to merit a genuine attempt to master it, and, secondly, to create in him a real and personal love of its literature.

The former of these objects may surely be attained best by the strict teaching of grammar and syntax. These form a branch of the subject which can be reduced to rules, and can therefore be used as an antidote to the vagueness of the literary side of it. Parsing and analysis, properly employed, are of inestimable benefit in convincing a child that he has something to learn about his own language, and they should be begun in the lowest form, and continued throughout the school so far as may be necessary, anything approaching drudgery being carefully avoided, of course. Grammar, points of style, criticism, and so on should be added gradually, class by class. Nothing should be made too difficult, but at the same time the pupil should never be allowed to feel that he has nothing to learn. Repetition, elocution, and composition would be carried on side by side with this, but the stereotyped essay on such a subject as "Trees" or "Hobbies" might very well give way, in all classes except the highest, to original stories, dialogues, and poems. Quite apart from the exercise of the imagination, the average boy has nothing to say about trees, but he will write pages in supplying the solution to a mystery, and so will have plenty of scope for showing his weaknesses in composition, which is what we want. Then, if he is acquiring a sound and methodical knowledge of grammar, his mistakes are easily pointed out; if, on the other hand—to quote from personal experience—he knows not the difference between an adverb and an adjective, explanation becomes well-nigh impossible.

So much, then, for the main outlines of the "work" side of the English question. When we come to consider literature, bearing in mind what has already been said, we are forced to the conclusion that no attempt should be made to "teach" it at all. The paramount necessity here is to cultivate in the pupil a genuine and *personal* taste for the works of the great English writers, and the best way to do that is to let him read them by himself. To distribute, say, thirty copies of "Ivanhoe" to a form, and set individuals to read sections of it aloud—perhaps very badly—or even read it aloud oneself, is merely to turn the novel into a school-book for the time being, and does not greatly encourage the pupil to read more Scott for his own amusement and edification. Reading, needless to say, should occupy the major portion of the English lessons, and the readers should be left to themselves entirely, save only in the choice of books. As a rough-and-ready scheme, it might be suggested that, in a form of thirty boys, the English teacher should, at the beginning of his course, select thirty books suitable for his purpose, and request each boy to buy one of the thirty—poetry, of course, being included. In the literature lessons each boy would simply sit and read his own book; and when he had finished it, he would exchange with some other boy, and start afresh. Thus, instead of reading one or two books dismally as class subjects in the course of a term, he would probably get through from six to a dozen, and be interested in most of them. In fact, experience has shown that he would very soon begin to read the books in his spare time, and so get through even more than that.

As the boys left that form, the school would redeem the books and use them for their successors; so that each form would, in course of time, collect a literature library, carefully adapted to its needs, and permanent. This could be added to at pleasure, and it needs little imagination to guess the effect of such a course of reading carried on incessantly for from four to six years. Finally, and above all, the books should not be used as mines for questions for the grammatical side of English work. They should be treated purely as literature to be read and enjoyed. A. SAXELBYE.

Cranleigh School, Surrey.

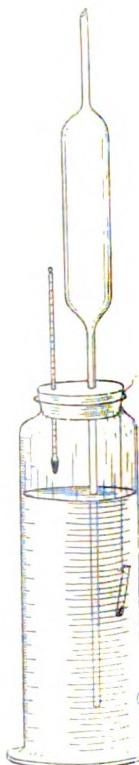
#### The Equivalometer.

In all the school chemistry books that I have examined the equivalents of aluminium, zinc, magnesium, etc., are still found by what is generally termed the "long tube" method. The name will suggest the method to most of my readers. A long tube is filled with acid or alkali and inverted, with its mouth under water or acid contained in a small pneumatic trough or mortar. A piece of the metal is weighed and dexterously introduced, either by itself or in a small test-tube, under the mouth of the long tube. Soon the acid and the metal come into contact—hydrogen is liberated and displaces an equivalent volume of liquid from the long tube. An elastic band or a piece of cotton is used to mark the height of the liquid in the tube, and, by filling the latter with water to this level and transferring the liquid to a graduated cylinder, the volume of hydrogen liberated can be obtained. I always disliked this method. A large amount of acid was used, and, however much one tried to economise by using water in the pneumatic trough, one always had a large volume of impure dilute acid left on one's hands. Many pupils, particularly girls, seemed afraid to introduce the small tube under the long one, perhaps from fear of breakages, or from fear of their chapped hands. Further, a large amount of apparatus had to be used: pneu-

matic trough, long tube, retort stand, measuring cylinder, etc.

For several years I have used the following method which is cleaner, safer, more accurate, and more economical than the method described above. There is no acid flowing over the benches, the hands are neither wetted nor injured by acid, there is no transference to a measuring-vessel, the gas can readily be measured at atmospheric pressure, a smaller quantity of acid is required and it can be used again and again, a stronger acid can be used, and the result obtained in a few minutes. The apparatus consists of a graduated cylinder, with or without stopcock, according to the amount one wishes to pay. This is fitted with an india-rubber stopper, through which passes a pipette which dips almost to the bottom of the cylinder. If one wishes to take the temperature of the gas, a small thermometer also passes through the stopper. The vessel is four-fifths filled with acid (or alkali, if the equivalent of aluminium is being determined). The metal is weighed, put into a small tube, covered with water, and lowered into the acid. The latter will ascend the pipette a centimetre or so; the removal of a few drops of liquid at the stopcock will restore the air in the cylinder to atmospheric pressure. The level of the liquid is then read. The hydrogen liberated forces the acid into the pipette. If too much metal has been used, and the acid threatens to fill the pipette, the danger may be averted by opening the stopcock. When all chemical action has ceased, the stopcock is opened, and the volume of hydrogen is measured at atmospheric pressure. From this point the result is worked out in the ordinary way. This piece of apparatus which may not inaptly be termed an "equivalometer" has been used in my classes for the last three or four years, and has invariably given satisfaction.

WILLIAM R. FIELDING.  
Ierna, Galloway Road, Fleetwood.



## The School World.

A Monthly Magazine of Educational Work and Progress.

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The Editors will be glad to consider suitable articles, which, if not accepted, will be returned when the postage is prepaid. All contributions must be accompanied by the name and address of the author, though not necessarily for publication.

# The School World

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SIXPENCE.

## THE AGE FOR BEGINNING FOREIGN LANGUAGES.

By G. H. CLARKE, M.A.

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"IN the nursery period, say up to the age of eight or ten, the infinitely plastic parts of the child can be moulded upon, at any rate, two modern tongues; though the wider application and the analysis of them must be deferred till later" (Sir Clifford Allbutt, *Times Educational Supplement*, November 16th).

For children lucky enough to have the opportunity of thus beginning foreign languages no course could be better, so long as they are able to continue the "affectionate polyglot companionship" which enables them to "pick up two, and, with care, even three, tongues in the nursery." But what of the less fortunate? Experience reminds us that, in similar circumstances, some children of three can read as well as some of twelve, that others at four will amuse themselves with sums of their own setting while many several years older have a difficulty in learning to subtract. Supposing that such children were taught together, should they all start their first foreign language at the same time?

If only our educational system had been, or were to be, founded on the laws of psychology and experience, this screed had not been written. As things are, we can, in our considerations, aim at little else than expediency.

One stipulation must be made, that scholarships shall be given only to children distinctly above the rank and file in ability. It is not to the advantage of the nation to finance mediocrity at the public cost. Superior intellectual powers in scholars are assumed throughout our article.

I should interpolate here that the early education of those who are to leave school at fourteen or fifteen can never form a national basis for those who mean to continue at school and university until the age of twenty-three or

twenty-four. Perhaps it is unfortunate that so much stress is laid upon age, for years have often little connection with mental powers: *La valeur n'attend pas le nombre des années*. In addition to this, when examinations are held only annually, the accident of birth of candidates a week or so under the fixed age tells most unfairly in their favour and against those fifty-one weeks under the age-limit. Yet it is very rare to find that any age allowance is given.

Some two dozen headmasters were lately discussing subjects of educational and professional interest, among which was the question: At what age should French be begun? A suggested at thirteen years of age. "No," said B and others; "we admit children at eight to nine; we are not going to wait so long." "How would ten do, then?" asked C. "Quite impossible," declared several; "we do not take pupils under eleven." "Then put the age at twelve," proposed D. "Some free-placers are older than that when they come to us," objected two or three. "It's hopeless to try to find a solution," put in E; "I have scholars from several sources, who usually know no French. Some of them enter at about eleven, others at quite two years older. Until you settle where primary education ends for such children as are going on to secondary schools, you will never solve this puzzle and others connected with it."

It is indeed useless to discuss how French should be taught, when it should be begun, or what standard should be expected, until the conditions are fixed under which it will be learnt. Not only is the age of entry closely concerned with our inquiry, but the time children remain at school as well. We know that the length of school-life for boys above twelve on the grant list is about two years nine months, and the average leaving age about fifteen years seven months. We are told that four years is the shortest secondary-school course of any value. On these grounds, what use is it to a boy to

begin French at thirteen? There is no unification of education at present, no general scheme for transference of children from primary to secondary schools. Now, *tous les citoyens sont égaux devant la loi*—even large ratepayers—therefore we must make provision for the training of intellect in whatever rank of life it may be found. The only claim to a scholarship for his child that a parent must have in the future is that of income, considered in relation to the size of his family, irrespective of political considerations. A child will only have to prove his talent, from whatever school he comes.

Before all things, then, it is necessary to draw up a scheme for unification of schools. This done, the rest follows. Though the present article is professedly written to discuss the question of when to begin to teach French (we assume that the second foreign tongue is begun a year after the first), it cannot confine itself to that one point. It is due to patching and to failing to regard all grades of schools as parts of a whole that English education is in its present ragged condition.

The beginning age in State schools must be so fixed that pupils are not driven into unworthy private-venture schools. In some towns the wisdom and munificence of the past have provided schools within the reach of most, supplying all educational needs from nine to nineteen, or, at least, able to do so. Other towns may have a decaying grammar school and backward primary schools. A third may have a secondary school with fine buildings and low salaries, and well-equipped central schools at which French is taught. We can scarcely dare to hope for an English Government bold enough to face the situation and provide such a system of schools in each town as the population and needs of the place require. Much will be readily done, no doubt; the public must be worked up to insist that that much may become far more.

Bearing in mind that we want to promote transference from primary schools to secondary schools, children from the former cannot be handicapped by delaying their opportunities; they must have equal chances with pupils from other schools. It has been lately computed that in a certain county the average age, on entering the secondary school, of thirty-seven county bursars, who completed their training last July, was twelve years seven months. Of these, twelve failed to secure full examination qualifications as student teachers, while four failed outright. The average age of the twelve failures on admission to the secondary schools was thirteen, that of the twenty-five successful bursars on admission was twelve years six months. This is valuable evidence,

to which more weight attaches than to mere opinion. We want facts to go on. When we are told that those who have been taught from books “never become able either to express themselves in that [foreign] language so as to be understood, or to understand the language when it is spoken by others,” we recall the Germans, who, merely by *Selbststudium* in Langenscheidt’s “Sprachbriefen,” have learned to speak English well and to understand it when spoken. On the other hand, most of us have met the Englishman on the Continent who is unable to understand a native or to express himself intelligibly in the foreign language after living abroad for months, or years even, in which study of the language with natives had not been neglected. *Le temps ne fait rien à l’affaire.*

France and Germany put the age for beginning the first foreign tongue at nine or ten. Have we any evidence to show that ten is too early for English children to begin at, and that there are other more suitable subjects than French to be taken by pupils under thirteen? Or is it proposed to cut down the hours of school for ages ten to twelve in the case of those who are to begin French at thirteen? If the easy-going southerner welcomed this for his children, our hardier brethren north of the middle of England would not agree to it. Nor, we think, would the average girls’ schools look on the proposal with favour.

There is another point of importance: When are primary-school children to be allowed to leave? Can we assume that no exemptions will be granted to children under fifteen?

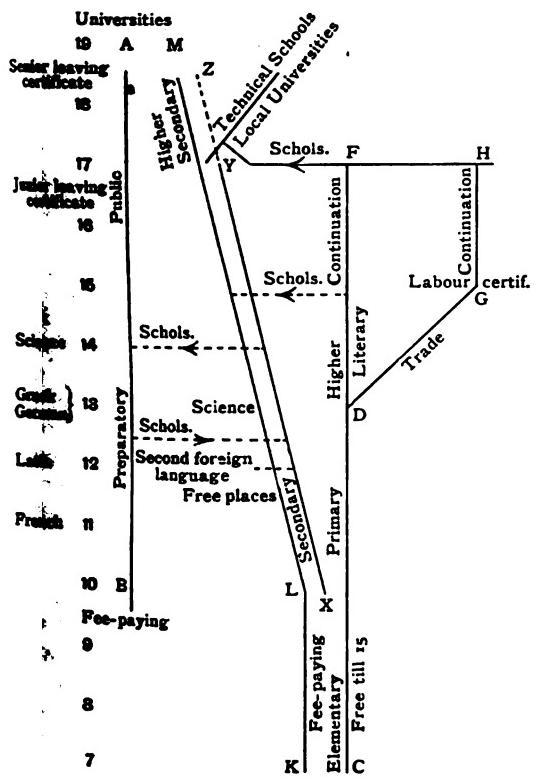
Before setting out the scheme proper I venture a prefatory remark: There is no suggestion of making French an examination subject for free-place scholarships. All elementary schools cannot be expected to teach a foreign language. Whether French might be taught by them to ex-VII. pupils is a question difficult to answer in the case of children—if any fit to be transferred to secondary schools.

It is assumed that leaving certificates of real value will be established, competed for by pupils of under seventeen and of under nineteen, and that the Government will no longer speak with two voices, saying with one: “Boys must stay longer at school”; and with the other: “Now, O promising boys in secondary schools, here are some nice blind-alley boy-clerkships for you to compete for. Leave school early, commit educational suicide, and destroy your future prospects.”

**PUBLIC SCHOOLS.**—As regards public schools and preparatory schools, represented by A B in the diagram on the opposite page, so long as they do not begin two foreign languages in the same term and then proceed to

crowd in Greek on the top of these in the following term, it may be left to them to arrange their order and period of beginning languages, always stipulating that they both must justify their existence by admitting State inspection, and that public schools must offer a reasonable number of scholarships to secondary-school pupils at the age of about fourteen. The requirements of the leaving certificates, which many of their boys will need, will force on all schools a certain amount of conformity. Further, preparatory schools would be influenced by the scholarships to be offered to pupils of about thirteen by the grammar (or secondary) schools.

## **ELEMENTARY SCHOOLS.—Elementary schools,**



C F and C D G H, scarcely come into the discussion. Higher elementary schools (central schools), D F, D G H, alone have to be considered. Their literary side can scarcely begin French before the age of thirteen. In spite of this, the writer believes that scholarships could be provided, in secondary schools, for really clever elementary pupils of under fifteen, who could be accommodated in carefully arranged sets, notably in foreign languages and in science. Accommodation could be simplified by the adoption of the four-course plan, described below. Such a transference of scholars would only be of a few boys and only possible from strong elementary schools. Unusually able pupils, who for some reason did

not hold free places, would thus have a chance of entering secondary schools and of profiting, so long as they had brains and determination. We assume that elementary schools from D onwards will be improved by the diminution of the numbers in a class and a rationalising of the curriculum.

**GRAMMAR SCHOOLS** (Grade 1).—The flourishing grammar schools, K L M, usually situated in large towns, some of them drawing numbers of picked pupils from a vast area and commonly carrying boys from eight to nine to eighteen to nineteen, can scarcely be expected to postpone French till thirteen. The competition of knowledge shops, which the nation suffers to exist for the beguilement of parents, and the influence of public-school and university examinations, force on the first-grade secondary schools a course beginning and culminating at fixed points. Few of these schools could begin French much later than eleven; some will not do this unless they start an earlier course of Latin, balanced, perhaps, as an alternative, by Spanish. It is just as well for the writer to express the heresy here that the beginnings of Latin are easier to young boys than the beginnings of French.

If big schools of the kind under contemplation adopted the French plan of courses, the difficulties of transference would be largely solved, for sections (c) and (d) would suit scholars coming from elementary schools below the age of fifteen, as has already been suggested. The main subjects of the courses might be: (a) Greek, Latin; (b) history, modern languages; (c) mathematics, science; (d) science, modern languages. (This arrangement, of course, is only given in illustration, and not as a target.) Schools could adopt all or parts of this system, according to the needs of their pupils. As these schools are large, French would be taught in sets, and would be no obstacle, even if begun at eleven, to free-placers entering under the age of twelve. Some authorities already transfer their free-placers before they reach the age of eleven; the general tendency is to fix the age for such scholarships below twelve. It will have to become the rule that all free-placers must be transferred before the age of twelve.

GRAMMAR SCHOOLS (Grade 2).—The school of the future—not one that turns out "clerks and politicians" in place of "skilled craftsmen and statesmen"—for the majority of our people will be a State school, X Y Z, admitting boys about ten. In large towns such a school might provide several courses and culminate in a senior leaving certificate, Z. Small towns would have to be content with a less ambitious scheme, and might only be able to support a school with the junior certificate, Y, as its

goal. A school of this type is well represented by one of which the *programme des cours* happens to be before me, the Collège cantonal de Lausanne, ranging from : VI<sup>e</sup> classe (élèves de 10-11 ans) to I<sup>re</sup> classe (élèves de 15-16), with possibilities of transference to a gymnasie classique for final preparation for entrance to the University of Lausanne, particularly, if mathematics are substituted for Greek, to the École d'Ingénieurs. Republican Switzerland is nothing if not democratic. The Collège de Lausanne provides, as has been seen, an intermediate course which can be prolonged, and begins its main subjects in languages thus : Latin, 10-11; German, 11-12; Greek, 12-13; French, being the mother-tongue, comes first, and does not fall under our consideration of foreign tongues.

As German is not unfamiliar to all the pupils of the school, an exact parallel between Swiss and English needs, as exemplified by the Collège de Lausanne, fails to some extent. But the instance is of value, as it shows that Swiss experts have no fear of children beginning more than one language at school before the age of thirteen. It can scarcely be maintained that pupils beginning a language at thirteen will attain a higher standard by the time they have reached sixteen than those starting at eleven.

Statistics do not show that those who begin French at thirteen, Latin at fourteen, and Greek at fifteen maintain the same standard at sixteen as those who start at eleven, twelve, and thirteen respectively. Children beginning a subject at thirteen will eventually catch up those who began the same subject at ten, but they will not do it in a year or two. Is it not also a moot point whether pupils taught on the dramatic method reach so high a standard at last as those in whose case the classical method has been adopted? Whatever we do, large numbers of children will never remain at school after the age for the junior leaving certificate, and they must have every chance given them. The standard of French at English public examinations is already deplorably low; can we risk further depreciation? The relief of young learners could be carried out by the introduction of the metric system into Great Britain to far greater advantage than by postponing the beginning of languages unduly and thus encroaching on the claims of science.

We have, then, tried to arrive at an expedient time for starting French, and other tongues in due order, convenient to all, so far as is possible amid the "gaps, anachronisms, picturesque survivals, and serious hindrances" incidental to our educational chaos. We fix it for beginners at the age of eleven. But we

are fully conscious that the school of the future will have to cater for literary pupils as well as for those scarcely able to tackle even one language besides their own, certainly incapable of learning two. For such, liberal provision will have to be made even from the despised subjects kindred to those of "Group IV."

Take care of your scheme and your French will take care of itself.

### PARAPHRASING AND KINDRED EXERCISES.

By NORMAN HEPPLE, M.A., M.Litt.  
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TWO and a half years ago the revival for discussion of such a threadbare subject as paraphrasing might have seemed as futile as it would have been irrelevant; but, as the familiar adage has it, circumstances alter cases, and at a time like the present, when all the subjects in the curricula of our schools are being critically scrutinised with an eye to their relative values in the imminent reconstruction of our educational system, it may not be inappropriate to re-examine the subject of this article, as a component part of all that is summed up academically under the term "English." For the position of English as a whole in any schemes devised for operation after the war will be determined by the respective values attached to the separate exercises and branches of study comprised in the term.

English education after the war will, it is safe to assume, almost certainly have a strong bias towards utilitarianism. However distasteful it may seem to many who have the best interests of education at heart, "practical utility" will be, for several years to come, the criterion of much of our educational practice. And unless the phrase be interpreted in a grossly literal and material sense, we need have no fear that the tendency to turn to practical account in the service of the nation all that is taught in the schoolroom will have any other than beneficial results: a wise and sane balance may still be preserved. Viewed aright and raised to the high plane to which it belongs, this inclination towards utility is seen to be simply a phase of the great principle that education is sound and good in so far as its results may be measured in terms of actual performance, of faculty for performance, or of active influence in the formation of healthy character, and the reactions of these. Approaching the question, then, in the light of this principle, which is at present being emphasised with an ever-growing

insistence, we may find it profitable to ask what definitely practical purposes paraphrasing and the exercises allied to it may be made to serve.

And, first of all, as the term "paraphrasing" is used by different people to denote different things, let us, to avoid misapprehension, tabulate clearly the exercises we have in mind. They may conveniently be classified as follows:—

#### I.—REPRODUCTION OF LANGUAGE IN OTHER LANGUAGE.

(a) Usually an isolated sentence is given and the pupils are required to ring the changes on the words or phrases in it, so as to produce its equivalent. The subject-matter is so limited and obvious that attention is devoted almost wholly to the language.

(b) An extension of the above exercise to a continuous passage of verse or of prose the meaning of which is readily understood, the ordinary rules of paraphrasing, such as the non-omission or non-addition of ideas, the preservation of the same tense and person, etc., being adhered to. Regard must in this case be paid to the ideas, inasmuch as they must be reproduced and their sequence observed, but the pupil's attention is equally, if not, indeed, for the most part, still directed to the language. This exercise serves, therefore, as a kind of link between I. (a) and II.

#### II.—REPRODUCTION OF IDEAS IN OTHER LANGUAGE.

(a) A further development of the exercise is its application to continuous passages of prose or of verse the meaning of which is not so easily comprehended, the formal rules of paraphrasing again being complied with. This exercise involves thought-analysis: the ideas must be grappled with individually until the difficulties are overcome, and each thought, as it becomes clear in the mind of the pupil, must be stated clearly in his own words and tabulated. When the thought-content of the whole passage has been analysed in this way the paraphrase may be proceeded with as in I. (b). In this case it is evident that the ideas are of primary importance and the change of language is merely a secondary consideration.

(b) Elucidation: an exercise similar in all respects to II. (a) except that the restrictive rules of paraphrasing are no longer in force, and the pupil is at liberty to add ideas, or to adopt any other device he may think fit, to make the meaning of the passage clear and intelligible in his exposition of it.

#### III.—PROSE RESCRIPT.

This is a kind of construing of a passage where the writer fills in gaps, and in the case of poetry restores metrically inverted passages to their normal prose order, always preserving, so far as possible, the language of the original. It may be used as an independent exercise, but as the passages selected for use under II. (a) and (b) generally consist of elliptical verse and condensed prose, a rescript in normal prose is often a necessary preliminary to such exercises, and is usually regarded merely as a stage in the making of thought-analyses and elucidations.

Of these five types of exercise the first three may legitimately be called paraphrasing, inasmuch as each of them involves the reproduction of a passage in language which, so far, at any rate, as it is the expression of the intellectual content, is the equivalent or parallel of that in the original. Incidentally, the order of the exercises as here set out, except in the case of the prose rescript, is also the order in which they should be taught; and as many of the so-called objections against paraphrasing are made upon the assumption that paraphrasing consists only of types I. (a) and (b), it seems important to remember that these exercises are merely stages in preparing pupils for the more valuable form of paraphrasing as described under the heading II. (a). Not that such preliminary exercises have no independent value—we shall see presently that they have—but if used too frequently, and as ends rather than as means, they certainly may lend themselves to abuse.

Next, having cleared the ground, let us ask what practical purposes exercises such as those we have tabulated may be made to serve. Hitherto, in recognising their worth as tests of comprehension, we have, perhaps, rather overlooked their value as aids to composition, and it is mainly on the latter account that we claim their inclusion in the "English" curriculum as having definitely practical results; for while there may be some grounds for scepticism as to the value of studying a poem like "The Lotos-Eaters," for example, with all its seductive passivity, there can be no manner of doubt as to the utilitarian value of clear, accurate, and fluent English composition.

What, then, precisely, do paraphrasing and similar exercises contribute, individually and collectively, towards the acquirement of this highly important accomplishment? Let us begin with the most elementary type, I. (a). This, as we have said, is open to abuse if the pupil merely tries to find from a dictionary

or other source synonyms for the individual words, but if we require that he shall not, except in the case of words quite unfamiliar to him, seek the equivalent of anything lower in the scale of sentence elements than a phrase or a clause, the exercise is of value inasmuch as the dexterity acquired in the manipulation of the language, even if it be more or less mechanical, makes for fluency and ease in continuous composition. The same is, of course, true of types I. (b) and II. (a), with the additional advantage that they conduce to accuracy of statement. Some time ago the writer published elsewhere an analysis of the causes of failure in English composition, and the greater part of the evidence he was then privileged to collect pointed to one cardinal cause of failure—a widespread inability to grasp and define clearly each idea before committing it to writing. All the "sentences" ended but not concluded, the false beginnings, the loosely and inaccurately attached clauses, the changes of construction in mid-sentence, the wrongly related participles, the ambiguous pronoun-references, and the generally spineless, limp, disjointed sentences, so distressingly familiar to the teacher of English, are directly traceable to a defect in power on the part of the pupil to isolate mentally each idea, and to see it wholly, in a firm outline, before relating it to others. In most cases this defect can be remedied, and what better instrument is there to hand for use in school than frequent exercise in elucidation and paraphrasing, especially as described above under the heading II. (a)?

The essence of such exercises is thought-analysis, and whether the language of the reproduction in its ultimate form is entirely different from, or at certain points the same as, that of the original, the process involved, namely, the disentangling of the thoughts, the concentration of attention on the single thoughts when separated until their significance is clearly grasped, and their simplification in such a manner that no shade of meaning shall be overlooked, affords training in just that kind of accuracy and clear definition which is essential to effective composition. Moreover, in this connection it should be noted that by directing his attention to the *exact* meanings of words and phrases the pupil is at once making his vocabulary more accurate and extending it.

Having overcome the initial difficulty of getting his thoughts sufficiently clear in his own mind to enable him to express them exactly, the novice in the art of composition often experiences further difficulty in properly relating such thoughts one to another. The

type of school composition in which, while the individual sentences are correct and clear, there is an entire absence of logical arrangement is well known. The sentences might have been sprinkled out of a pepper-caster, so little is there of order or sequence in the way in which they are put together; and so to organise them as to produce a consecutively developed composition constitutes for many people, adults as well as children, a real difficulty. This is especially evident, for example, in the attempts made by pupils to write a formal paragraph complying with the familiar rules prescribed by rhetoric. The variation of sentence lengths and forms and the preservation of unity seem to present no very great difficulty, but the rule of coherence which requires that the sentences be arranged in sequence, so that one shall lead naturally to the next, and the paragraph be thus logically and properly developed, is by no means so easily complied with.

Now in paraphrasing or elucidation, after the thought-analysis is completed, the pupil is faced by a similar difficulty: the thoughts have to be synthesised, and in thus recombin-ing them into a continuous passage, he has to determine whether the original order shall be preserved or whether in the interests of clearness it would be beneficial to make some changes in this respect. In addressing his attention to this matter, during a course of paraphrasing, he not only gets practice in the coherent combination of sentences, but has brought before him a variety of models for direct observation of this very point.

It may, therefore, be claimed that these exercises afford substantial help to composition in the following particulars:—(1) Extension of vocabulary, (2) increase of fluency, (3) clear definition of thought and accuracy in expression, and (4) the logical relation of sentences to one another—no mean contribution, we venture to think, towards the teaching of a subject of such undeniable importance.

As regards the objections sometimes alleged against paraphrasing as a school exercise, these are generally reducible to three: that it is absurd to convert good and beautiful verse or prose into inferior prose; that it is a desecration of our best literature to put it to such a use; and that it is bad for a pupil to think that his paraphrase is as good as the original passage. To the first of these charges this article, it is hoped, has already furnished a sufficient reply. As to the second, it seems obvious that the remedy lies in the hands of the teacher himself; if he should feel that it is degrading a fine piece of verse or prose to prescribe it for paraphrasing, let

him choose suitable passages from literature of minor importance or of less inspired quality. Personally, the writer never prescribes passages of the first excellence, although he well remembers paraphrasing, as a boy, the more difficult stanzas of Wordsworth's "Ode to Duty," and the exercise cannot be said to have detracted from his reverence for the poem. Indeed, he still feels grateful to the master who compelled him to persevere until the stanzas had yielded up their treasures to his boyish understanding. So far as the third objection is concerned, it should be borne in mind that beautiful poetry or prose admittedly produces effects often quite untranslatable into other words. At the same time, however delicate and subtle such effects may be, they have as their basis a certain logical substratum, and it is with this that paraphrasing is concerned. Most pupils recognise that, while they can reproduce this, they cannot capture the other elusive qualities the presence of which in the original they nevertheless feel; and in making this admission they show their consciousness of the inferiority and limitations of their own work. We are convinced that a pupil is very seldom—if, indeed, ever—under any delusion as to the comparative merits of the original passage and his own version.

Finally, it seems scarcely necessary to point out that in everyday life countless occasions arise when paraphrasing is necessary. A preacher, for example, who thinks in terms of abstract theology must paraphrase to his congregation; a medical man often finds it necessary to paraphrase for the benefit of his patient; a teacher must paraphrase to suit the capacity of his class; an insurance agent who works in premiums, risks, surrender-values, and the like must frequently paraphrase to his uninitiated victim; in short, whenever we find it necessary to adjust our language to the understanding of our audience we bring paraphrasing into operation. The man of undoubted ability, who yet cannot communicate his thoughts to those less intellectually gifted than he, is by no means an uncommon phenomenon. One wonders whether his capacity for usefulness would now be so limited if he had had a carefully developed course of paraphrasing while he was at school.

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## THE KINEMA IN THE TEACHING OF GEOGRAPHY.

By J. FAIRGRIEVE, M.A.

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MOST experienced teachers of geography are agreed that pictures are very valuable in their work, and that the lantern supplies an unrivalled means of exhibiting pictures easily and quickly. Many teachers would like to go farther and use the kinematograph. But there are difficulties. Some of these difficulties are instrumental. The precautions which have to be taken because of the inflammability of the film make the use of the kinematograph in the classroom practically impossible at present.

There is, however, a further difficulty, that few teachers would know how to use a kinematograph effectively for teaching, even if some genie were to supply all the mechanical appliances that could be desired. It is, indeed, difficult to find out what we do desire, and to experiment to find out how to get the best results.

Two lectures given at the Royal Geographical Society in January help to throw a little light on the teaching, as distinct from the mechanical, problem. These lectures were illustrated by kinema pictures, and though the show element was not entirely eliminated, the lectures were more nearly geography lessons than anything that one sees at a picture-house. At the latter the picture is the thing, and anything else is an accessory. At the Royal Geographical Society, though the kinema was running nearly all the time in one of the lectures, it was felt that, after all, the description of the geography was the main thing, and that the picture was merely an aid.

Of the two lectures, one was on the great falls of the I-guazú, and was illustrated by lantern-slides as well as by the kinematograph. In the other the kinematograph alone was used to illustrate an extensive journey along the coast of Brazil to the Argentine, across the Andes to Valparaiso, again along the coast to Peru, and then by many devious ways again across the Andes and down the Amazon to Manaos. The second lecture was in many ways the more instructive, as it brought out the weaknesses as well as the advantages of the kinematograph. It was made up of many short lengths rather than of longer pieces. Further, few printed explanations were interpolated. The connective tissue was supplied by the lecturer. In both these respects there was an approximation to what may be expected

in classroom practice rather than to the usages of the picture theatre.

It need scarcely be said that by the use of the kinematograph the lecturer was able to make his points far more effectively than would have been possible in any other way. One could realise the difficulties of trans-Andean travel in winter, whether by train or by portage. Short films showed Indians coming to market in the central Andes, llamas and alpacas laden, the expedition crossing a river, and the natural movements in a forest of animals such as jaguars and snakes. These films showed bits of the real thing twenty times better than a lantern-slide could have done. It is not necessary in this place to labour the advantages of the film under certain conditions. It is more to the point to inquire under what conditions it is satisfactory, and under what conditions it is the reverse.

In the first place, it was quite obvious that the most effective films were either those in which the objects shown were in motion or those in which the camera had been in motion when the picture was taken, though films of the former type were more uniformly successful than those of the latter. Whether it was the rush of the water in the first lecture, or the movements of German troops in Bolivia a year before the war in the second, the film was infinitely more convincing than would have been slides in which the falling water or marching feet were caught and fixed motionless. Perhaps the only moving object not entirely successful, though it suggested great possibilities, was a gradually lengthening line on a map of South America which showed the route taken by the expedition. Of the second type, though successful on the whole, there were films which were somewhat ineffective. Films were distinctly successful in which the camera was carried on a raft down the Amazon and a continuous panorama made of the banks. Of this series one of the best was that in which the camera was lashed to the raft when the latter was caught in a whirlpool and rotated at a terrific rate. Of the less successful was one in which the camera was carried on a moving train, and the most exciting thing was an extensive vista of rails. A film from a moving train, or more probably from an aeroplane flying at a low altitude, might be very useful, but the camera should not be pointed straight ahead. Buildings of the Incas and other still-life objects were obviously not suited to kinematograph representation. A lantern-slide would have been considerably more effective. The photographer had naturally not wanted to waste his

film, and had used too short a length to allow the spectator time to take anything in.

This introduces another consideration, as to which the second lecture was again more instructive than the first. The lecture covered a vast field, and the lecturer was thus in the same position as the teacher who has to get through an extensive syllabus. He had perforce to show a great number of short lengths. The enormous advantage of a few short lengths over one film of greater length was well brought out. The essential thing was usually seized on and shown.

Yet some of the short lengths were unsatisfactory from the teaching point of view, partly because they were short and partly because of the way in which they were used. It is true that in many cases a longer film would not have helped matters, and might, indeed, have spoiled the effect. Nevertheless, it was difficult for the lecturer to indicate the notable points, and more difficult for the audience to observe them. Occasionally the device was adopted of stopping the film, and, of course, shutting off the light, in order that the lecturer might tell the audience what it was going to see and to be ready to see it; but even this expedient was not very successful. In the case of buildings and stationary objects generally the remedy is obviously to show the picture as a lantern-slide, which may remain on the screen as long as necessary. In the case of moving objects the remedy is not quite so simple, but two suggestions may be made. It would seem to be an advantage—in the classroom certainly, whatever might be done in a public lecture—if such a film could be repeated and if it could be stopped during, at any rate, one of the repetitions without the light having to be cut off. In fact, the chief defect of the kinematograph in the classroom is that, while motion is analysed mechanically, the analytical study of any subject shown on the screen is extremely difficult. In the classroom we wish not only to get a general impression, but to *see* what we are looking at. Any experienced teacher knows how long the individuals in a class take to see what is on even a still lantern-slide. A moving film seen only once would in many cases be quite beyond them. With a slide or with a film that may be stopped the essential analytical study is possible. We are thus led to the conclusions that (1) the slide will still be absolutely necessary; (2) for class use the film should be short, and should be repeated until the class can see what is happening; and (3), if possible, the film should be such that it can be stopped for exhibition at any point.

## MR. FISHER'S PLANS FOR THE FUTURE.

MR. FISHER'S memorable speech in the House of Commons on April 19th really consisted of two quite distinct parts. The first and longer part dealt with matters which arose immediately out of the Estimates—the readjustment of financial relations between the central and local authorities; the preparation for the consolidation of elementary-school grants; the remedying of the low and uneven remuneration of teachers, both elementary- and secondary-school; and the improvement of secondary education by means of maintenance allowances, the encouragement of advanced courses, and the clearing up of the examination chaos. All these questions the Board of Education can proceed with, provided Parliament grants the money, no fresh legislation being necessary. The second part of the speech comprised schemes which cannot be carried into effect without legislation. Indeed, as it is not permissible to discuss legislative proposals in Committee, we gather that this second part of Mr. Fisher's speech was not strictly in order. Fortunately, however, the Deputy-Chairman, though bound to disallow any discussion of these proposals, made no pedantic application of the rules of the House to Mr. Fisher's speech. In our last issue we set forth in some detail what Mr. Fisher hopes to accomplish without delay. We now turn to remark briefly upon the further reforms of which he spoke, and of which the additional grants he asked for constitute an instalment.

He spoke of the universities, and in particular of the need for developing post-graduate research. But the universities are so peculiarly affected by the war that their financial needs can be disclosed fully only when the war is over. All that Mr. Fisher allowed himself to say was that in the process of reconstruction the avenues of approach to the universities must be thrown wide open to talent, wherever it may be found. If this is to be done, however, he pointed out that the provision of higher education, instead of being an optional, must be made a compulsory duty of every local authority. The coming Education Bill will, therefore, not leave so important a matter as the co-ordination of all forms of education in a particular area to the discretion of the local authority.

Mr. Fisher next spoke of the reforms he contemplates in connection with the elementary-school system. The elementary-school tradition, handed down to us from times when the "three R's" were reckoned all in all, makes no distinction between urban and rural

schools, and, notwithstanding sundry suggestions made from time to time by the Board, this tradition still holds sway. Mr. Fisher, though he does not so express it, evidently has in mind the principle that a child cannot be truly educated if his environment is ignored, *i.e.* if school and life fall apart; and he hopes to reform the country schools in accordance with this principle. Again, he appreciates the undoubted fact that our educational treatment of children under five is anything but satisfactory, and he will invoke the aid of Parliament to empower local education authorities to establish nursery schools for young children, so that they may gradually be released from the formal instruction given in the elementary school. At the other end of elementary-school life, the work of the upper standards urgently calls for reform. Here there is too much marking time. The "three R's" have, or should have, been acquired by the twelfth year, and the great need is then for opportunities of practical work, whether in handicraft or in housecraft, and also of humanistic teaching of an inspiring kind. Such opportunities can be provided without legislation, but it is useless to provide it unless the children are there to profit by it, and legislation will be needed in order to extend the period of compulsory schooling to the age of fourteen.

Mr. Fisher reserved for the concluding portion of his speech what he regarded, surely with good reason, as "the gravest deficiency in our educational arrangements," *i.e.* "the inadequate provision for the intellectual, moral, and physical discipline of young persons during the period of adolescence." He acknowledged what has been done by our existing evening schools, and by agencies of which the Boy Scout movement is the shining example; and he did not conceal from himself the fact that any proposed scheme of continued education will be exposed to cross-currents of criticism from the various interested parties. But he drove home the incontestable, though neglected, truth that the capital of the country does not consist in cash or paper, but in the brains and bodies of the people. Even for material progress only, the better culture of those brains and bodies is the question of the hour.

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*Strategical War Maps of Europe. No. 4: The Balkans.* Eighteen miles to an inch. (Philip.) 2s. 6d. net.—This sheet, 48 in. by 37 in., includes the area approximately between the four points Breslau, Brindisi, Constantinople, and Kieff. The political areas—Hungary, Rumania, Bulgaria, Serbia, etc.—are shown completely, and there is a conventional hill shading. Rivers, railways, etc., are indicated. A useful map.

## REGULATIONS FOR SECONDARY SCHOOLS.<sup>1</sup>

"THANKS IN ANTICIPATION."

By A HEADMASTER.

**W**RITING of the new regulations for secondary schools, we are using in its best sense this favourite formula—a vulgarism once gibbeted by Prof. Skeat—because we see that "in the Estimates for the financial year 1917-18 further sums will be asked for." Now, such teachers as years of grind and poverty have not deprived of the power of hope may look forward to improvements in work, in the length of school-life of their pupils, and in their own prospects.

As the application of the maintenance grants is described in section 1 (chap. i.), a teacher may be excused for dwelling first on this purely material but vital point. Will the aspiration that the new grant may result "in a marked upward movement in salaries" be rewarded? The answer is in the hands of the local authorities.

The permissive character of the regulations in this respect is perhaps unfortunate. One ill-natured critic has said that "all that is good in Cd. 8,541 is Fisher's; all that is bad is the Board's." We certainly seem to see throughout a kid-glove treatment of the local education authorities, with a dictatorial attitude towards schools. The Board "has confidence that the increased grants," which will be paid in any case, "will be properly applied by the authorities"; it lays down stringent rules to be observed before it will even consider a request from teachers for power to establish an advanced course. Local pride of place needs no encouragement; national needs must be satisfied, not left to take their chance.

Let us hope we are false prophets. For it is no small extra sum that will be paid annually to schools. Where so much depends on ages and varying circumstances, all schools will not receive the fresh amounts in the same proportion each year. On a rough calculation, a school receiving a grant of £1,000 now may hope for about £1,500 in the future.

**ADVANCED COURSES**, sections 5-10, 47-50.—The possibility of helping boys to continue at school from sixteen to eighteen by means of scholarships, and of being able to provide teachers to work with them, is a cheering prospect. The extension of school-life and the relief of teachers from want will have a better effect on English education than any move yet made by the Board. We should have been glad of a little more light on some points that will emerge so soon as a Head turns his atten-

tion to making a time-table for the suggested advanced class. For instance, the regulation do not state how many pupils will be expected to take a course to enable a school to qualify for the new grant. Until the certainty of receiving a grant is clear, a Head may not be able to say how many pupils will stay on to make use of it. Will eight or ten be considered enough? If such a number offered and received a scholarship of some £10 each annually, and if only one additional teacher is required, there will not be much change left out of £400. The wording of the regulations is vague in another case too. Does "entering an honours course at a university" (section 48) mean that advanced students have to proceed to the older universities as scholars? Mr. Fisher has said: "Our leaders in industry and commerce should have, if possible, a full secondary-school education." Why, then, should not such prospective leaders be allowed to take an advanced course in subjects suitable to them, viz. economic and kindred subjects, tending to the London degree in economics? Such a course would not differ greatly from that called "modern studies"; but it seems excluded by the regulations.

Only stock subjects find favour with the Board. Unless we are under a delusion, nothing new is sanctioned. As our overseas cousins tell us: "We come here Imperialists we leave disgusted." Your authorities, they declare, love to preserve what has gone on for centuries, however time-worn; they will not admit fresh ideas. A system fails. Its supporters trot out as an argument against some proposed change in it the fact that the system is the outcome of 400 years' growth. Modern conditions are not taken into account.

In spite of this, the regulations for 1917 are an improvement on any so far issued by the Board. We recognise it, are thankful for the fact, and do not wish to carp, when we confine our remarks to pointing out weaknesses rather than to praising the undoubtedly excellent points that are as new (to the regulations) as they are valuable.

Space only allows us to make a few more remarks on special sections. Section 7 (chap. ii.) hints that, if two foreign languages are taught, one should be Latin. Must this proviso of the "400 years' type," now an incubus, always remain with us? Shall we continue to justify the criticisms of our friends from abroad and of much medical opinion that we know nothing, learn nothing, improve on nothing? Is it not conceivable that a student who is brought up on two modern languages, science, and mathematics, and takes a London D.Sc., is as well educated as a Balliol scholar

<sup>1</sup> Regulations for Secondary Schools in England. [Cd. 8,541.] 2d. net.

with a classical training, far less narrow-minded, and of more use to the State? Here, too, we seem to feel the "dead hand" of the visionless.

A combined course (section 9) may still be substituted in girls' schools for science and for mathematics, other than arithmetic, for girls above fifteen. If science and mathematics may be given up, why must that last resort of barren minds, school arithmetic, be continued? It is understood that by the age of fifteen a fair standard in arithmetic will have been attained: why neglect algebra and chemistry for a soul-starving subject such as ciphering?

There are some uncertainties in two of the remaining sections. By section 14 the staff may, as usual, not undertake work which the Board considers detrimental to the discharge of school duties. How does this affect those teachers whose labours in evening schools undoubtedly interfere with the efficient discharge of their duties in their classrooms?

Section 22 mentions the responsibility of Heads of schools, but does not appear to insist on their presence at meetings of the school governors. Imagine a meeting of Harrod's directors without the manager! Until the Head is assured that his status will not be considered by the governors to be beneath that of the local washerman, who may be one of their body, the right men to manage schools will not offer themselves for service as teachers.

There are other regulations that could be commended, fewer that could be blamed, in Cd. 8341, which we regard as an earnest of better things to come, and therefore welcome—critically, certainly, but nevertheless heartily and hopefully.

### THE FUTURE OF THE CLASSICS.

THE claims of the classics to a hearing in connection with educational reconstruction after the war—a question which is rightly attracting much attention just now—are not likely to be neglected. There is, of course, a danger that, in our anxiety to promote national efficiency, we may assign an undue prominence to the scientific and technical sides of education. These branches have their scholarly aspects, but it is their utilitarian side that appeals too readily to the average parent. We must be on our guard against that, even for the sake of science; and we must also recognise what are the natural limitations of science as an educational subject. If the British nation is not to develop into something resembling the present popular conception of

the German nation, the "humanities" must never be banished from our educational curriculum. "Science" may give us more and better shells; but we must encourage the ideals inculcated by the study of "literature" (including Greek and Latin literature) to prevent us from dropping those shells upon Rheims Cathedral. A deputation from the Classical Association waited upon Mr. Fisher recently in order to set forth these claims, and it did not limit itself to vague encomiums upon the "classics," but urged the definite proposals printed below:—

(1) That the Board of Education be asked to use its influence and resources towards securing:—

(a) That in each area of accessibility for school attendance there should be at least one secondary school for boys and one for girls, at which efficient teaching may be provided in both Greek and Latin to a standard enabling pupils of ability to enter a specialised classical course of a high standard in some British university. In order to do so they must under present conditions be fitted to compete with reasonable chance of success for entrance scholarships at the different universities.

(b) That in every area a system should be arranged by which pupils who so desire can be transferred to such schools in the area; and that in the case of the holders of scholarships an additional allowance should be made to cover any increase in the cost of daily attendance where travelling is involved. If more than one local authority is concerned in such an area, a combined scheme should be organised for transferring the tenure of scholarships for this purpose.

(c) That, besides the school or schools in which Greek is taught, the number of secondary schools maintained or aided by the local education authority, which provide teaching in more than one language other than English, should be steadily increased; and if the first language is a modern language, the second language should always be Latin, unless for special reasons Greek were preferred in some particular cases.

(d) In the case of pupils who do not pass directly from an elementary into the classical secondary school, facilities by means of scholarships for transfer into the classical school from other secondary schools should be provided. The successful working of any such scheme depends upon the general facilities existing in the area (i) for the transfer of all able pupils from primary to secondary schools at an age early enough to enable them to profit duly by a secondary course; and (ii) for their remaining at school long enough to complete it.

(2) That the Board be asked to regard a training in Latin language and literature, and at least some knowledge in the original of the typical parts of Greek literature, as an important and generally necessary element in the training of all teachers of English literature above the elementary stage; and to use its influence to encourage the application of this principle in secondary schools.

(3) Finally, the Classical Association desires to direct the attention of the Board of Education to the existing

tendency by which the education given to the cleverer children who come from the elementary schools bears a different stamp from that given to children of the professional classes, being directed more narrowly to material and industrial well-being and less to the effective study of literature and history. Among the pupils from the elementary schools will be many who are likely to exercise influence in the public life, both municipal and national, of the coming generation; and in the interest of the whole community it is of high importance that these future leaders of their fellow-citizens should have some knowledge of the past history of mankind, especially of its political institutions and experiments, and should acquire an enduring interest in the ideals of both private and public character, by which the noblest sides of civilisation have been moulded. The Classical Association observes with interest the declaration of the Workers' Educational Association ("Educational Reconstruction," Recommendation 12) :— "That since the character of British democracy ultimately depends on the collective wisdom of its adult members, no system of education can be complete that does not promote serious thought and discussion on the fundamental interests and problems of life and society." The Classical Association believes that this end can be secured only if the same freedom of access to the thought and history of the greatest races of the past as is given to the children of the more privileged classes is also, by a wise system of national education, opened to children from every class of the community.

### SCIENCE IN SECONDARY EDUCATION.<sup>1</sup>

THE memorandum first sets forth somewhat exhaustively the purposes of natural science teaching and the present position of natural science in secondary education. Certain recommendations follow.

First and foremost, science should be taught to all boys in secondary schools for the sake of its educational value, the importance of which lies in the fact that it involves investigation based on experimental evidence. No other subject in the curriculum provides this particular form of training. The course for all boys should give a broad and comprehensive view of the subject, closely related to and enlarging the outlook upon life. All cannot be scientific experts, yet all should acquire a sympathetic appreciation of science.

The second purpose of teaching science is to train those who show special aptitude for science in order that the natural need for research work may be satisfied. The value of pure research should be upheld against

merely utilitarian advantages, for without research there can be no advancement.

In a review of the present position of science teaching, the factors which at present hamper satisfactory progress are considered. So far as the public schools are concerned, the general conclusions are: (1) Arrangements are, on the whole, sufficient to meet the all-too-limited demands of medicine, engineering, technical chemistry, and other professions in which science is directly necessary. (2) The importance of elementary science as a part of a liberal education has not been admitted; consequently, the average of scientific knowledge in these schools has been low. (3) Only a small part of the latent scientific ability has been developed, mainly because there has been no reasonable basis of selection of those boys likely to display special aptitude for the subject.

The results of these conclusions are: (1) In the professions a moderate standard of scientific attainment has been maintained. (2) The greatest lack of scientific knowledge and training has been shown by men occupying administrative positions. (3) Since those who are responsible for the curricula of schools have, very largely, come from the public schools, there has been little tendency to get outside that "vicious circle" which excluded science as a necessary subject.

In the new aided and maintained secondary schools, elementary science is an integral part of the curriculum and occupies a position which is in no way inferior to that of any other subject. The greatest drawback in these schools is that sufficient provision has not been made for those boys who are capable and desirous of proceeding beyond the elementary stage. Often the provision for laboratory work is unsatisfactory. The absence of an efficient laboratory assistant in the great majority of schools tends very greatly to hinder the work of the science master. Economy in apparatus and material is often pushed to extreme limits. The purchase of apparatus is too frequently hedged round with unnecessary restrictions; the requisition form has to pass through many hands, and the granting or withholding of the request is considered by many officials. The consequent delay is often aggravated by the fact that the apparatus which finally reaches the school bears little resemblance to that which was requisitioned.

The insufficient supply of teachers, the reasons for which are outlined, is a potent factor operating against improvement, while the fact that so few science teachers undergo

<sup>1</sup> Memorandum of Evidence submitted by the Incorporated Association of Assistant-masters in Secondary Schools to the Government Committee on Science in the Educational System of Great Britain.

any training in teaching is regarded as deplorable.

An extension of facilities for teaching science at all stages in the public schools and in the higher stages of the aided secondary schools, the provision of skilled laboratory assistants, and the simplification of the bureaucratic machinery for the supply and repair of necessary apparatus are indicated as the cardinal needs of school science at the present time.

We reprint the more important recommendations of the Association of Assistant-masters as presented to the committee :—

#### RECOMMENDATIONS.

##### (A) ORGANISATION.

(a) *Of the Science Staff.*—There should be one of the science staff who is responsible to the headmaster for the efficient organisation of the science of the school. The science masters should form a committee, with the senior master as chairman, which should meet from time to time, to arrange courses of study, promotions, etc., and to see that proper co-ordination between various divisions and departments is maintained. Heads of departments should be responsible for the equipment of their own laboratories. For the general upkeep of each laboratory there should be an annual grant, based on the number of pupils, and at the disposal of each man in charge of a subject. Separate provision should be made also for the purchase, from time to time, of the more costly pieces of permanent apparatus.

In every school there should be at least one adult laboratory assistant, who should be a skilled man, and paid accordingly.

(b) *Of a Science Course for all Boys.*—Each school should have a definite course of science which should be taken by all pupils up to the age of sixteen. The course should be designed to meet the needs of the particular school. Each member of the staff should be allowed complete latitude in the method of presenting his subject, provided that he follows the course all down, so that proper co-ordination may be maintained. The senior science master should be responsible for the maintenance of the general policy of the science teaching.

In the larger schools, especially on the classical side, the teaching of science is much hampered by the fact that promotions are made without any reference to the amount of the science course which has been covered. Many boys therefore (especially the more capable boys) have to miss whole sections of the science course, and thereby the unity of the subject is really obscured. This difficulty could be got over, to some extent, by the regrouping of the school for science. The size of the groups or blocks would, however, be limited by the science accommodation of the school and by the number of masters on the staff capable of teaching elementary science. The latter difficulty will tend to disappear if the inclusion of a

reasonable amount of science in the curriculum of every school is made compulsory.

In the aided and maintained schools, the difficulty does not arise because elementary science is regarded as a form subject. In the final aggregate of marks on which promotions are based, science receives its due weight in proportion to the number of hours given to the subject.

(c) *Specialisation.*—Passing now to the further education of those who remain at the secondary school beyond the age of sixteen, we recommend that no boy should be allowed to specialise in any subject before he has acquired a good general education which has included the course of elementary science.

(d) *Size of Classes.*—The classes for science in charge of one master should not contain more than twenty boys. After the beginning of the third year of the school course the number of boys doing laboratory work under one master should not exceed sixteen.

##### (B) CURRICULUM.

(a) *Freedom to Devise Methods.*—Uniformity in schools is the last thing wanted; educational experiment is needed, and most of all in science, which is new. Genuine experimenting is essentially an act of faith rather than of sight. No teacher need expect to have a claim to experiment recognised before he has acquired good experience in teaching on approved lines. Sympathetic inspection is welcomed by all science teachers as of very great value.

(b) *Curriculum:* (1) *Preparatory Schools.*—The boy should not spend any time on the exact sciences before going to the secondary school. The subject which can be taught with the greatest success to boys younger than thirteen is Nature-study. This should be in the hands of an enthusiast, who should be given freedom to choose his own subjects and to devise his own methods.

(2) *Secondary Schools.*—Two main types of secondary schools have to be considered separately—(A) those in which most of the pupils leave before the age of seventeen; (B) those in which many stay until eighteen or nineteen.

Type (A).—In this type of school more time will be given to science than in the other, age for age. The science course should be general and educational in character rather than utilitarian. Exceptional cases of specialisation might be allowed, preferably for the dull boy and not for the clever one; preferably, also, as voluntary, out-of-school work. The other sciences present difficulties at some schools in comparison with chemistry and physics; but they lend themselves to different treatment, and lecture courses by specialists not on the staff of an ordinary school are of great value—e.g. in natural history, physiology, astronomy, invention, and exploration. English school science is weak in this respect.

Type (B).—In this type of school the aim of science teaching to boys from fourteen to sixteen years of age is the same as in the others, but there is less need to devote so much time to it. The difficulty arises after sixteen, when some specialisation becomes advisable. At least three classes of boys have to be con-

sidered: (a) the science specialist; (b) the literary specialist; (c) the other boys.

In schools where there is a science side there is little difficulty. A boy is expected to study chemistry and physics for the sake of knowing them and utilising his knowledge in business or profession. He should spend the greater part of his time at science and mathematics. Reliance on the teacher should be gradually relaxed, the boy should be more and more trained to rely upon his own reading, the faculty of distinguishing for himself the vital points in the expansive treatment of a particular principle should be sedulously fostered. He should be encouraged to devise his own experiments and to carry them out within limits. Some time should be given to the reading of classical researches in the language in which they were originally published. The reading of good English literature accompanied by essay writing should also be insisted upon. Provision should be made for boys taking up agriculture, brewing, engineering, etc. Boys who wish to work for a university scholarship should be encouraged to do so, and those going into the medical profession should cover the syllabus of the First M.B. and should take that examination before leaving school.

The Regius professor of medicine at Cambridge states that "since the First M.B. at Cambridge could be taken on admission the standard in the subjects for this examination, so far from falling, has risen by a substantial fraction."

The courses at present devised for the "normal" boy and the literary specialist leave much to be desired. What is required is a course demanding enough intellectual effort to attract the clever, and not too much to discourage the average, boy. It should aim at making clear both the main lines of advance of science in the past and living problems of to-day, not only in chemistry and physics, but in biology and all sciences dealt with in the British Association sections. Such a scheme would make heavy demands on the science staff of the school, and therefore something akin to the University Extension lectures should be introduced. The value to the school science of such lectures by able lecturers would be very great indeed. A new type of laboratory syllabus would also be necessary, with rigid exclusion of all but the most highly instructive experiments.

(c) *Correlation*.—The special bearing of the work which is done in the science classes on the work which is done in other classes, and *vice versa*, must be carefully considered. Thus the science master must anticipate the requirements of his colleague who has to teach physical geography; on the other hand, the curriculum in mathematics must be adjusted so far as possible to the needs of chemistry and physics. In this respect special attention should be directed to the teaching of mechanics, the principles of which ultimately form the basis of all other branches of natural science. Elementary practical mechanics should be part of the science course, and it should be taught at a stage when it would be deemed most useful to the science masters, and when it might also serve as an introduction to the more advanced mathematical treatment.

## ELEMENTARY MATHEMATICS IN GIRLS' SCHOOLS.<sup>1</sup>

THE syllabus of mathematics contained in this report is the outcome of an inquiry made by a special committee of the Mathematical Association into the teaching of mathematics in girls' schools. Much information was collected from heads of schools and from teachers of mathematics as to the methods, organisation, and scope of the teaching in their respective schools, and with this as basis the committee, consisting entirely of women experienced in the training of girls in the subject, proceeded to draft a syllabus. It decided that there was no evidence to show that any great differentiation was necessary between the subject-matter presented to boys and girls, though it was possible that rates of progress and times for beginning the various branches might differ. Therefore, without considering the requirements of boys, it has drafted a scheme of instruction that seems to it suitable for average girls, and such as should form part of the education of every girl who remains at school until the age of sixteen.

It is in no sense intended to be a rigid syllabus; to the mathematical specialist it would be more a suggestion that she could adapt to her own needs and those of her pupils. It aims at being helpful to that large body of non-specialists who are compelled to teach the subject, especially the arithmetic part of it, without the training which it really requires. The inclusion in the syllabus of full explanations of alternative methods, both of working and setting down problems, should be of great value to such teachers, if they can be induced to study them. Old, clumsy, unintelligent methods are still disastrously prevalent.

The most interesting parts of the report are the "arithmetic of citizenship," the emphasis on the idea of functionality as the basis of algebra teaching, the omission of much manipulative work (thus gaining time that can be profitably expended on more fertile parts of the subject), the early introduction of easy trigonometry, and the suggestion of a simple treatment of the calculus as part of the ordinary schoolgirl's education. The first of these is based on a syllabus drawn up by Prof. Nunn in 1911, and covers questions which involve most of the old barren rules of interest, discount, and stocks, but here treated from the human and living point of view. Such a course in the hands of an inspiring teacher would do much to remove from the

<sup>1</sup> Report of the Girls' Schools Committee of the Mathematical Association 1916. (Bell.) 1s. net.

woman citizen of the future the stigma of stupidity and lack of interest in the world of public and private finance. It may also convince her that it does not require the intellect of a Newton or a Kelvin to understand. The last remark applies equally to the calculus. No attempt is made in the report to indicate how the ideas that underlie this indispensable tool of modern mathematics can be introduced—each teacher must select her own method. But the committee has deliberately included the subject, thereby indicating that its experience has shown it to be both possible and desirable.

The following extracts from the report will give a "taste of its quality":—

**INTRODUCTION.**—Before attempting to draft such a syllabus it was necessary to consider carefully a question which formed part of the inquiry just mentioned, namely, whether girls in general show less interest and ability for mathematics than boys. So few people have had opportunities of comparing the work of boys and girls under similar conditions that it is difficult, if not impossible, to express a decided opinion upon this question. In view of their own experience and such other evidence as they have been able to collect, the committee thinks that the ground covered by girls in mathematics should be substantially the same, so far as fundamental principles and processes are concerned, as that covered by boys. Any difference between the two courses might lie in the choice of the material in connection with which the subject is developed; but it must be remembered that the interests of a healthy girl, no less than those of a healthy boy, cover a wide field, and care must be taken to avoid limiting those interests. In particular it is necessary to guard against hasty assumptions as to what is and what is not interesting to a girl.

**ARITHMETIC : Rough Checks.**—It is strongly recommended that from an early stage children should be taught to make a rough estimate—varying with their knowledge and skill at each stage—of the answer to be expected from each calculation. This habit is not only valuable as promoting accuracy, but it tends to keep the pupil's intelligence on the alert and to teach her to use her common sense.

**Approximations.**—Complicated and difficult examples in approximations should be avoided. In connection with their ordinary work in decimals, however, the pupils should be trained to recognise the degree of accuracy of their results and to see that it is always limited by the degree of accuracy of the data. A further extension of the same principle is the limitation of the number of decimal places in accordance with the nature of the problem and the purpose for which the result is required. . . . In connection with the question of approximations it should be noted that long and complicated calculations are rendered unnecessary by the introduction of logarithms into the school curriculum.

**Arithmetic of Citizenship.**—The "arithmetic of citizenship" is set out in more detail than other parts of the syllabus, since it may be comparatively new

to some readers. It is believed that it will be found very valuable, both as presenting to the pupils a large and important field of mathematical applications and as furnishing an interesting means of acquainting them with certain important facts of national life. It is a common experience that such matters as stocks and shares, banking, simple and compound interest, introduced as a part of the financial aspect of modern life, acquire a strong interest, and are most healthily stimulating to the pupils. It is recommended that such a course be taken by all girls before they leave school. For those who remain at school until the age of eighteen or nineteen, it may perhaps be taken at a later stage than the one in which it is here included.

**Household Accounts.**—A further application of mathematics, in the form of simple accounts, should be made to the management of personal and household expenditure. Such a course has not been included in this syllabus, chiefly because it falls more naturally under the head of domestic economy; but the committee wishes to place on record its opinion that it is most desirable that all girls should be able to make this application of their mathematical knowledge. The subject needs only a few lessons for girls of average ability.

**GEOMETRY : Respective Aims of the Two Sections of the Work.**—The geometry of this syllabus is arranged in two divisions. The work of one (called below "investigational work") has for its aim the discovery and study of the geometrical facts of the world in which the pupil lives. This investigation is carried out partly by experimental and practical methods, partly by simple reasoning, the teacher suggesting one method or the other at her discretion. . . . It should be added that full use should be made of the opportunities offered by the investigational work of introducing, among others, the important principle of symmetry to the pupils.

The aim of the second division of the work is different from that of the first. It is to build up the body of geometrical truths into a closely reasoned system of which the foundation consists in a limited number of definitions and assumptions. Reasoning here has more concern with organising or systematising geometrical truths than with establishing them. It is essential that the pupil should clearly understand this function and should have prominently in mind the aim of the work.

**ALGEBRA : Aim of the Work in Algebra—Functionality—Variation.**—One of the main aims of the course in algebra is to develop the idea of functionality, and the various items of the syllabus should be treated with this end in view. The idea will not be a new one. The functional relation of one quantity to another (or others) is in simple cases familiar at a quite early stage; for example, every child knows that in buying sugar the cost depends both on the weight purchased and on the price per pound. The teacher will take every opportunity of extending this idea and of making it more precise, the introduction of the systematic study of proportion affording the best occasion in the arithmetical part of the work for develop-

ing and illustrating it. In the algebraic part of the course the expression of functionality will in general take two forms, graphic and symbolic (e.g. the formula  $A = \pi r^2$  for the area of a circle and the corresponding curve, namely, that obtained by plotting the area against the radius), and the fact that these two forms are only different expressions of the same relation should be constantly present in the pupil's mind. Her aim should be to find and to express the relation between one quantity and another (or others) upon which it depends, the expression of the relation in symbols sometimes preceding, sometimes following, that in graphic form.

### PERSONAL PARAGRAPHS.

**T**HE news of the death on May 7th of Edward Leopold Milner-Barry will come as a shock to all who regarded him as full of vigour and promising a ripe old age. He was born fifty years ago, and was educated at Yarmouth Grammar School. After studying for some time at German universities, he proceeded to Pembroke College, Cambridge, but migrated to Gonville and Caius College on winning a modern language scholarship there. He gained a first class in the Medieval and Modern Languages Tripos in 1889. For six years he was professor of German at Bedford College; for sixteen years he was a master at Mill Hill (housemaster from 1897 to 1907); for two years he was lecturer in German at Birkbeck College; and he then became professor of German at Bangor. Soon after the outbreak of the war he joined the R.N.V.R., and had risen to the rank of lieutenant-commander. As a teacher and examiner he acquired great experience, and this, coupled with his sound common sense and vigorous personality, made him for many years a leading member of the Modern Language Association; before going to Bangor, he was long on the executive committee, where his sound judgment was much appreciated. His scholarly knowledge of German enabled him to do academic work of high quality; he found little time for writing books, but many of his university pupils will gratefully remember the conscientious care with which he taught them, as will the generations of Mill Hill boys who knew him. To his old friends and colleagues his death will be a great loss.

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WE regret to have to announce the death of Julia Byron Cooper (*née* Kenny), the wife of the well-known landscape painter, who has been for more than thirty years a teacher of singing at the Manchester High School for Girls. She succeeded Dr. Hecht, coming from London, where she had been a pupil in the Frances Mary Buss School, and

where she was associated with John Hullab, Clara Novello, and other musicians of the Victorian era. Trained as a performer, Mr. Byron Cooper was obliged by delicacy of health to take up teaching, and has given to many generations of pupils the stimulus of her refined taste and knowledge of the best music, and the example of a life of devotion to duty.

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THE death is announced of Mr. W. H. Andrews, who had been a master at Mill Hill since 1894. Mr. Andrews was educated at Mill Hill and at Sidney-Sussex College, Cambridge. He obtained a first class at a Classical Tripos in 1892, and returned to Mill Hill in 1894. There he has worked with Sir John McClure during practically the whole of his headmastership, and so during the rapid development of the school. Mr. Andrews was a keen classic and an inspiring teacher.

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LIEUT. A. G. VEITCH, who was at one time lieutenant in the Leicester R.H.A., but lately was working with the R.F.A., has been killed in action. Mr. Veitch, who was a scholar at Queens' College, Cambridge, took a mathematical degree and became lecturer in applied mathematics at Bristol, and afterwards mathematics master at Wolverhampton Grammar School.

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MR. S. A. PATEMAN, who was history master at the Lancaster Grammar School, and commander of the O.T.C. until he accepted an appointment at Marlborough, has been wounded while serving with the Wilts Regiment.

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FRÄULEIN ANNA MARIA CURTIUS has just been appointed lector in French at Leipzig University. The lady thus becomes, we believe, the first woman university lecturer in Germany. She has made a special study of the French language and literature at Geneva, Besançon, and Paris, having paid particular attention to phonetics under M. Paul Passy and the Abbé Rousselot. Since 1901 she has been teaching at one of the municipal high schools for girls in Leipzig, as well as at the training college there. In 1902 Fr. Curtius became Officier de l'Académie; in 1907, Officier de l'Instruction publique de l'Université de France; and in 1910 she was awarded the Prix d'éloquence by the Besançon Academy for a study entitled "Maître Victor Hugo comme poète dramatique."

\* \* \*

MR. T. GAUTREY has resigned the office of general secretary to the London Teachers

ocation, a position he has held since 1879. Gautrey, in acknowledging a resolution providing a superannuation allowance for him, said that, though he was going, he was not going to feel old. During his secretaryship he had been guided by three principles: had always endeavoured to be loyal to the Association in school work, to the School Board, and to the London County Council; had endeavoured to weld together the local sections of their members; and he had advocated the interests of individual members. J. Pincombe, formerly assistant-secretary to the association, is to succeed Mr. Gautrey.

\* \* \*

Mrs. BURGWIN has retired from the post of superintendent of the London Special Schools for physically and mentally defective children. Though few who worked with her would know the fact, she has reached the County Council's age limit, and in recognition of her continued and devoted service in the cause of social welfare, she received a presentation at the hands of Lord Sheffield from many friends and admirers. Mrs. Burgwin has taken an active part in all movements for the social well-being of the children of London, especially in providing open-air schools and country holidays.

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Ms. D. MCKAY OHM, of St. John's College, Mandeville, second master at Sir John Deane's Grammar School, Northwich, Cheshire, has been appointed headmaster of Grace Ramsay's Grammar School, Elland, near Halifax.

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SIR EDWARD PARROTT, the new member of Parliament for South Edinburgh, has a thorough knowledge of the teaching profession and of education. Both his parents were heads of elementary schools in Liverpool, and his wife was a trained certificated teacher, an inspector of schools in Liverpool, and principal of the Pupil Teachers' College. He himself was a pupil teacher in Liverpool, entered the Cheltenham Training College in 1882, and on completing his course there served for three years as a teacher in Sheffield. At that time Sir James Yoxall and Mr. Goldstone were both teaching in Sheffield, where the latter and Sir Edward Parrott were active members of the then new Assistant Teachers' Association. Sir Edward's next appointment was as headmaster of Anfield Road School, Liverpool, where he remained for sixteen years. He then became a member of the editorial staff of Messrs. Thomas Nelson and Sons, Edinburgh, a position he still holds.

AFTER leaving Cheltenham Sir Edward continued his studies at Trinity College, Dublin, where he graduated in Arts and Laws; in 1907 the Educational Institute conferred upon him a fellowship, and in 1910 he was knighted. He has been a regular contributor to educational papers and is the author of some well-known school books—for example, "High Roads of History," "Britain Overseas," and "Stories of Famous Men and Women." Teachers will hope great things from this increase in knowledge of education in the House, and wish Sir Edward every success in his new career.

ONLOOKER.

### THE STUDY OF FOREIGN LANGUAGES.

THE languages sub-committee of the Modern Language Association has drawn up memoranda on the teaching of foreign languages in schools for boys and girls, and these have been adopted by the general committee of the association and published. We reprint the memoranda, except that certain paragraphs occurring in both have been omitted here from that dealing with girls' schools. It should be noted that the term "foreign language" is used to include both classical and modern languages.

#### BOYS' SCHOOLS.

It is desirable that the study of foreign languages in preparatory schools or departments (where any such study is undertaken) should be confined to one modern language, or one modern and one classical language—that a second classical language should only exceptionally be studied before the age of thirteen or fourteen. In this connection it is vital that a second classical language (probably Greek) should not as a rule be a subject in the scholarship examinations of the public schools.

In the (great) majority of cases (it is realised) the first modern language will be French, and first classical language Latin.

While French might well be taught as a special subject in certain selected elementary schools where efficient teachers are available, it is not advisable that the study in such cases should be begun before the age of twelve.

In the secondary or continuation stages of various types up to the age of fifteen to sixteen, in the case of pupils coming from neighbourhoods where the home influences are unfavourable, not more than one foreign language should be studied, while even in some instances it is conceivable that no foreign language at all might be taken; and in other schools the choice should be confined to two foreign languages at most, except in the case of pupils of fourteen who will probably stay on beyond the age of sixteen.

The following list of types is given here by way

of illustration, without any claim to make it exhaustive :—

Greek-Latin type.

Latin and modern languages.

Modern languages and science.

Science and modern languages.

Commercial and modern languages.

Technical and modern languages.

**1. Greek-Latin Type.**—This is the usual type to be found among the large public schools, or schools which have a classical side. In the case of boys entering a school at the age of twelve, we think that a minimum of four periods a week for the modern language is highly desirable for such pupils as have already been studying the subject. In the case of beginners, we consider that a daily period is necessary, at least for the first year. For schools in which the entrance age is later, the periods in the class of entry and in the subsequent classes should not fall below four a week, and on separate days up to the age of sixteen.

We think that the chief aim of the modern languages should be humanistic. In the widest sense this naturally involves some knowledge of the history and geography of the country and its people. Care should be taken to maintain a high literary standard in the choice of authors.

**2. Latin and Modern Languages.**—There are two varieties of this type. One is to be found in certain types of public schools in which Latin is regarded as of equal importance with modern languages, and another in which Latin is treated as an alternative to a second modern language. In both cases we consider that the modern language, whether studied alone or in conjunction with Latin, should be allotted a daily period per week for the first two years if the general age of entrance is twelve. In cases where it is higher, the curriculum for those above fourteen should provide a minimum of four periods a week at least if a second or even a third language has to be started at that age. The second or third language, whether French, German, Spanish, Russian, or Italian, if started at this age, should be allotted a daily period per week.

The aim again in this case should be to make the teaching humanistic, with a good literary standard. Some commercial specialisation might be attempted in the case of some of the pupils in the last year of the course.

**3. Modern Languages and Science.**—This course is to be found on the modern side of some of the public schools and in county council and municipal schools. The pupils before the age of twelve may or may not have studied a modern language in the preparatory department. The subject should, however, be begun in earnest by all after the age of twelve. In such cases we think one period a day is necessary until a second modern language is begun, when the periods assigned to the first language should not fall below four a week. In cases where no second language is taken, the daily period should be continued throughout. Here again the main aim of the teaching should be humanistic, with some possible commercial or technical specialisation in the last year.

**4. Science and Modern Languages.**—This is a variant of the preceding. It is to be found in schools or sides of schools in which the primary stress is laid on science, and only one modern language is taken, unless the second is studied mainly from the point of view of enabling the pupils to understand scientific works in that language. In such schools the modern language should have allotted to it a period. The main aim of the teaching should be humanistic, with some possible commercial or technical specialisation in the last year.

**5. Commercial and Modern Languages.**—This is to be found in certain sides of the secondary schools and in the central (or higher elementary) schools. In the former type two modern languages are sometimes to be found, and in the other one modern language is the rule. We are of opinion that a daily period in the first modern language is desirable, and that if and when a second modern language is begun, the periods allotted to the two should not fall below four per week. The curriculum of the first modern language should remain humanistic until the last year, when some commercial teaching might be attempted. In the case of these schools, in which two languages are taught, the teaching might be given a commercial bias in the second year.

In all cases in which commercial or technical specialisation is necessary, it will be found advisable to reserve it for the end of the course.

**6. Technical and Modern Languages.**—This applies to technical sides in central schools, to trade schools, junior technical schools, professional schools for cooks, waiters, bookbinders, etc. In all these the dominant aim is to give the pupils such a utilitarian knowledge of the modern language as will be of advantage to them in their future occupations. The pupils in the technical sides of central schools may require some speaking knowledge of the language if they go abroad, as is probable after the war. The future waiter will want to know the French vocabulary of waiting, the future cook of cooking, the future bookbinder will find it to his advantage to be able to read about books on his craft in French. The future printer will discover a knowledge of elementary French words and spelling useful as a compositor. In all these different cases the time allotted to the subject must be measured by the precise amount to be attained; a year's course of four periods a week might suffice for the printer, the cook and waiter would need at least a two years' course, and the future engineer who desires to learn the language for colloquial purposes will take at least as long.

The committee looks on the age of sixteen as at which more intensive specialisation may be begun. It is at this age that a large number of the pupils have passed a qualifying examination for entering university or have reached the requisite standard in passing such an examination. The amount of time to be devoted to modern languages in the case of such boys will vary very largely with the degree of specialisation considered necessary, whether the pupil be working for a classical, historical, mathematical, or scientific, or modern language scholarship, or intend-

to pursue their general education at the university, or preparing to enter the higher walks of commerce and industry, or those professions that do not necessarily require a university degree.

The committee assumes that candidates for classical historical scholarships will keep up their study of modern languages in view of the importance of these subjects for their later work. This would more easily follow if a modern language were definitely offered as a subject for such scholarships. We think in such cases three periods a week are desirable, and that such period were assigned to private reading, it would probably be little loss and a possible gain to the student. Of course, in the case of pupils who are still to pass a qualifying examination for the university, such as the higher certificate of the Joint Board, the subject would still be studied as a regular school subject.

In the case of candidates for mathematical or science scholarships who had previously studied Latin and Greek languages or modern languages only, or even only one modern language, the retention of a modern language in their curriculum appears to the committee an indispensable humanistic element, especially as the committee hopes that the conclusion of the war will see the abolition of compulsory Greek, which would provide a certain amount of free time that could thus be devoted to a more advanced study of the modern humanities. In the case of pupils working for modern language scholarships, owing to existing university requirements, some time would have to be devoted to Latin, with the view of passing certain preliminary examinations in such cases where the subject has not already been taken up by the pupils.

As regards the modern languages studied by the pupils, we think that, as heretofore, a choice should be left between English, French, German, Spanish, Danish, Russian, and other foreign languages. Probably the first foreign language chosen would be in most cases French.

In the case of those intending to pursue their education at the university by working for a pass degree, including a modern language (or languages), the teaching of the modern language (or languages) would be largely humanistic, and five periods a week at least to each should be given in the school curriculum, whether one or two languages are attempted. In the case of those who are proposing to study only one modern language at the university, with or without a subsidiary language (Latin, English, German, or the like), the committee, while deprecating undue specialisation, considers that more time should be devoted by such students while still at school to the particular language and literature of the country they are studying, including possibly history. When such students are hampered by having to keep up so many subjects by scholarships or other requirements of the university, the committee expresses the hope that such requirements may be modified to allow more time being given while at school to the particular language the student is proposing to specialise in. The committee suggests that such students should, during the last two or three years, devote

one and a half hours a day to the subject over and above the ordinary period given to it.

In the case of pupils intending to enter commerce at seventeen or eighteen, the main language should be that which is likely to be most useful to them in their subsequent career. The teaching of the language should, if necessary, deal with a knowledge of commercial terminology or with the language of economic or scientific writings. In cases where the future commercial man will not directly need a modern language the teaching should continue on humanistic lines. At this age there is no harm in a pupil studying other foreign languages solely with the view of getting such a knowledge as will enable him to read and understand the foreign language. This applies alike to pupils who have had either a predominantly modern language or scientific training. It also applies to those who are proposing to enter technical institutions in engineering or chemistry, and who desire to be able to read about their subject in another language.

As regards those pupils who are preparing to enter the numerous professions for which a university degree is not a *sine qua non*, the committee, while recognising the need for a definite standard of attainment being demanded from candidates for entrance, feels strongly that the teaching of modern languages in the case of pupils above sixteen would largely benefit if certain common equivalents established by the university could be substituted for the present multifarious examinations conducted by the various professional bodies concerned.

The committee is also strongly of opinion that in training colleges where students do not follow a university course the facilities for the optional study of a modern language should remain unimpaired.

The committee takes for granted that an adequate amount of time will be allotted to home-work in modern languages after the first year.

#### GIRLS' SCHOOLS.

It is desirable that the study of foreign languages in preparatory schools or departments should not, as a rule, be begun before the age of ten. This language in the majority of cases will be French.

It is rather to be recommended that the teaching of English grammar should be revived and encouraged in all schools in the early stages. The total ignorance in this subject, which comes to light when the foreign grammar is begun, is a very serious handicap to the modern language teacher.

The "compulsory Greek" difficulty is more acutely felt in girls' schools than in boys'; it is therefore vital that Greek should not, as a rule, be an examination subject for students going on to Oxford or Cambridge.

It is much to be desired that more encouragement be given to specialists in the way of university scholarships. Under present conditions the competition is intense, and scholarships mostly go to girls who have had some exceptional advantage—*i.e.* travel abroad or foreign governess at home—so that poorer girls have little or no chance.

The fact that German, or any other second modern

language, is usually an alternative to Latin, or another second modern language, is a very serious disadvantage. The intelligent pupils who are going to be teachers, or who are going to the university, invariably take Latin, and the second modern language is left to the "B divisions," who mostly leave early, and, being generally of considerably less intelligence, accomplish remarkably little.

It does not seem possible to class girls' schools according to type characterised by *special sides*, as in boys' schools. Domestic science is included in the ordinary curriculum of all secondary schools, and specialisation, except in some of the dual schools, rarely begins before sixteen in any subject.

Girls' schools practically class themselves according to the leaving age of their pupils, and very largely according to the number of the pupils and the percentage of staffing. In larger schools, with larger staffs, much more in the way of classification is possible. Difficulties of organisation in the smaller schools, especially in the dual schools, are enormous.

The following list is submitted by way of illustration, without any claim to make it exhaustive:—

1. Girls' high schools, including some of the older and larger endowed grammar schools, the G.P.D.T. schools, and some of the larger municipal and county secondary schools in London and provinces, also boarding schools or colleges. Leaving age, seventeen to nineteen.

2. The newer high schools for girls, variously styled municipal high schools, county or district secondary schools, (small) grammar schools (offshoots of old foundations for boys). Leaving age, fifteen to seventeen.

3. Dual schools. Leaving age, fifteen to seventeen, with the majority leaving at fifteen or earlier.

4. Higher elementary schools. Leaving age, fifteen.

5. Commercial and technical schools.

1. *Girls' High School Type.*—These schools cannot strictly be said to have definite "sides," as the term is used in boys' schools. Specialisation, as a rule, does not begin until seventeen; in some schools the year before, and in some the year after, matriculation.

On specialisation much freedom of choice is allowed as to subject, and the time allotted to foreign languages varies considerably, according to the aim or career in view.

Where modern languages or classics at this stage figure as the "special side," as much as two hours per day may be, and are, given.

In these schools French is often begun at seven or earlier (in the kindergarten); but even in the case of the large schools, where staff conditions allow of really graded and consecutive instruction, it is a question whether much would not be gained if the study were deferred until the age of ten. The French games and songs, etc., learned at the kindergarten and transition stage rarely do more than encourage slovenly and careless habits of speech, and blunt the keenness of interest when study of the language is begun in earnest.

In schools where only three or four periods can be given at this stage, it is highly recommended that no foreign language should be begun until a later age.

Where French is not begun until eleven to twelve daily period is also recommended, at least for first year, with a minimum of four periods afterwards when a second foreign language is begun. Second foreign language is mostly begun at twelve to thirteen, and it is not desirable that it should begin earlier.

In these schools special subjects, like domestic science (housecraft, hygiene, etc.), have a place in the ordinary curriculum up to the age of sixteen; after this there are what may be called special sides—secretarial training and housewifery.

For these pupils it is certainly desirable that the study of at least one modern language as a part of their general education be continued, and that it should be humanistic in character until the last year when in the secretarial department some commercial specialisation might be attempted. Four periods a week would seem to be advisable. There are still girls who cannot study even one modern language with profit.

2. *The more recently established High Schools, with earlier leaving age (fifteen to seventeen).*—These schools, whether styled municipal high schools, county secondary schools, district secondary schools, or grammar schools, vary little in character. Their aim, and to some extent their material, are the same as those of the older high schools; their school course, however, being clipped at both ends, very considerably restricts their powers. The better pupils generally work for one of the leaving examinations. Little provision is made for the few who stay on and wish to go on to a university or a training college or to specialise in any way, but these few rarely are enough to constitute more than a little group, who work mainly alone with the help of special coaching.

Many of these schools begin French in a preparatory or lower school department at the age of eleven, or even at nine to ten; but the intelligence of children who enter at this age is so undeveloped that extraordinarily little is done in the first year, and the time would probably be much better spent on English generally, and on English speech sounds and grammar in particular. If the foreign language is begun at this stage, nothing less than a short period, however short, is to be recommended for the first two years, with a minimum of four periods on separate days after the second year, or after the second language is begun. The second foreign language, often Latin, is usually begun at the age of thirteen to fourteen, after the second year of the more serious study of French. Not fewer than four periods should be allotted to it.

One difficulty which is acutely felt in the smaller schools is the impossibility of continuity in teaching. Pupils enter all the year round, mostly knowing French, and, owing to the smallness of staff, are drafted, according to their age, into classes that have been doing good work for one, two, or perhaps even three years. This constitutes a very serious check on the work of the class as a whole. These pupils enter in twos and threes, and therefore cannot form division of themselves.

It is much to be desired that some regulation

ld be made which would convince parents of the disadvantage it is to their children when they do enter at the beginning of the school year.

The aim of the modern language teaching should be humanistic in the widest sense, as defined for us, with possible commercial specialisation in the year.

*Dual Schools.*—These schools differ from the ordinary or grammar schools for girls in that the difficulties of time-tables are aggravated, at least in smaller schools, and in that the leaving age is fourteen to fifteen. In the larger schools very much more is possible, and much is indeed accomplished in the way of organisation.

Many of these may be considered to have special A and B (commercial) division, and substitute short book-keeping, and commercial English for, or specially take domestic science and extra work. In most cases they are not allowed to leave before the age of fourteen to fifteen.

The importance of modern languages seems keenly to be the rule for French during the first two years.

The second language (German or Latin) is begun at the age of fourteen (sometimes at thirteen), mostly in the second year of the school course, but occasionally in the third, and rarely fewer than four periods are allowed for it.

After specialisation has begun, the time spent on other languages varies considerably, according to the aims and requirements of the pupil.

In the case of students proceeding to the university, to take French and Latin, no further foreign language is required, but in all other cases, as French is in practice, compulsory in all schools, students of another modern language are, as a matter of fact, obliged (at least where a university requires Latin) to study three languages at school. This inequality seems to us to require consideration. Although classical teachers maintain that it is impossible for girls to matriculation Latin in two years, the thing is done, and the modern language teacher is often expected to get her pupils through in the second year language in that time, although very much more is expected of the candidate.

In higher elementary schools a modern language may be begun at twelve and get the usual three to four years' course. It should certainly be taught with a humanistic aim, and the pupils should learn something of the history, geography, national institutions, and customs of the people. A daily period throughout the course is desirable, or a minimum of four periods a week in the second and third years. When possible, some commercial bias may be given to the modern language teaching in the last year.

*Commercial and Modern Languages.*—This type is to be found in certain secondary schools where classes are formed for commerce and domestic science at fourteen, preparatory to the subsequent training offered by the commercial and technical evening schools.

We are of opinion that a daily period for the first modern language is desirable, and that if and when

a second modern language is begun, the periods should not fall below four per week. The curriculum of the first modern language should remain humanistic until the last year of the course, when some commercial teaching might be attempted. In the case of these second languages, the teaching might be given a commercial bias in the second year. In all cases where commercial or technical specialisation is necessary, it will be found advantageous to reserve it for the end of the course.

6. *For Schools of the Type "Technical and Modern Languages"* (see Memorandum Boys' Schools).—If the words "dressmakers and *interprète-vendeuses*" be added in paragraph 6 after the words "cooks, waiters, bookbinders," the same recommendations would seem to hold good for girls.

7. *Training Colleges.*—The recommendation that the facilities for the optional study of a modern language should remain unimpaired holds good also for girls' schools.

## TOWARDS AN EDUCATION POLICY.

THE Association of Directors and Secretaries for Education, which includes the chief administrative officers for counties and county boroughs throughout England and Wales, has drawn up and circulated a series of resolutions, which are described as "Towards an Education Policy," dealing with the more important questions which require legislative or administrative action. The resolutions are the result of prolonged deliberation, and were eventually adopted unanimously at a meeting of the association held on April 11th last. We reprint those of the resolutions which make a special appeal to our readers :—

In the interests of the State no child or young person should be debarred by lack of means from the highest education of which it is capable.

The upper limit of compulsory full-time attendance at the elementary school should be raised universally to fourteen years.

The power of local education authorities to supply or aid the supply of education other than elementary, as provided by the Education Act, 1902, should remain unimpaired.

It should be the duty of local education authorities to make adequate provision for such forms of higher education as are needed for their areas.

The limitation of the amount which may be raised by rate under the Education Act, 1902, Section 2 (1), should be removed.

It is desirable, in the interests of educational efficiency as well as of economy, that the Board of Education should resume its statutory powers with regard to agricultural education and should provide itself with the necessary expert staff.

## ELEMENTARY EDUCATION.

Children under five years of age should not ordinarily be taught as a section of the infants, but in separate nursery schools or otherwise at the option of the local education authority and should have the benefit of the school medical service.

Education during the compulsory full-time period,

especially in the upper standards, should be organised with a view to its continuance during adolescence.

No class should consist of more than forty children; each class should ordinarily have its own room, and should be in the charge of a qualified teacher.

#### CONTINUED EDUCATION.

A system of compulsory day continuation schools should be established, with a minimum of eight hours' instruction per week, or at least 320 hours per year, between the ages of fourteen and eighteen years, the instruction to be given between the hours of 8 a.m. and 6 p.m. The time spent at day continuation schools should be arranged to meet the needs of seasonal industries and other circumstances.

An obligation should be laid (1) on all employers to allow full time for instruction, including time for travelling, without deduction of wages; (2) on parents and pupils as to attendance; and (3) on local education authorities to make the necessary provision.

The total hours of labour and school attendance during the continuation school period should not exceed forty-eight per week.

#### SECONDARY AND OTHER SCHOOLS.

The possession of an approved certificate testifying to the completion of a satisfactory course in a secondary school ending not earlier than sixteen years of age should entitle the holder to exemption from compulsory continuation school attendance between sixteen and eighteen years of age.

The number of full-time day schools of varied types providing education higher than elementary should be largely increased.

Adequate provision of scholarships from elementary schools to secondary and technical schools, and from secondary schools to places of higher education of university rank, should be an integral part of each authority's scheme.

#### SUPPLY AND TRAINING OF TEACHERS.

The Board of Education, in approving schemes submitted by local authorities, should see that suitable and adequate provision is made for the supply and training of teachers either by the authority itself or in combination with other authorities; and the Board should be empowered to require authorities, if necessary, to combine for these purposes, each authority to contribute financially on the basis of total cost and user.

In order to secure an adequate supply of trained elementary-school teachers, it is necessary substantially to raise salaries.

For all certificated and uncertificated teachers in elementary schools there should be recognised minimum salaries and lowest maximum salaries throughout all areas, such minima and lowest maxima to be approved by the Board of Education.

A satisfactory service of well-qualified teachers for secondary schools cannot be maintained unless higher salaries and more definite prospects are assured.

Teachers' training colleges should be brought into closer relationship with the universities.

#### ITEMS OF INTEREST. GENERAL.

THE forty-third annual conference of the Association of Headmistresses (incorporated 1896) will be held on Friday and Saturday, June 8th and 9th, at St. Paul's Girls' School, Brook Green, Hammersmith. President, Miss Escott, Sheffield High School, will preside.

THE short courses arranged by the Board of Education to be held for teachers in secondary schools and training colleges during the summer vacation are—  
(1) A course in French, for women teachers of modern languages in secondary schools recognised by the Board of Education as efficient, to be held at Bedford College for Women, Regent's Park, London, N.W., from August 24th to September 6th inclusive. This course will be similar to that held at the same college in 1916, and in the selection of candidates for admission preference will be given to those who did not attend last year. (2) A course in methods of teaching elementary mathematics to children of eleven years upwards, for teachers of that subject in secondary schools, to be held by permission of the London County Council at the London Day Training College, Southampton Row, London, W.C., from August 24th to September 8th inclusive. As this course will be part-time only, and the number of admissions will be strictly limited, the selection will be restricted to teachers resident in or near London. (3) A course in English phonetics, for teachers engaged in giving instruction in subjects involving a knowledge of phonetics, to be held at University College, Gower Street, London, W.C., from August 24th to September 8th inclusive. This course will be planned with special regard to the needs of beginners in the study of phonetics. Full particulars, time-table and syllabus, of each of these courses will be being circulated by the Board to schools or colleges where teachers are employed who might wish to attend.

THE fourth annual Conference on New Ideal Education will be held at Bedford College, Regent's Park, from August 14th to 21st. The college will accommodate 100 members at 35s. for the week, payable on arrival; application to be made to the secretary, 24 Royal Avenue, Chelsea, S.W.3, with conference fee. Owing to the great importance of the subject, three days have been reserved for papers and discussion on continuation schools. The President of the Board of Education hopes to be able to read a paper on the opening day. Lord Lytton, Sir William Mather, Mr. Christopher Turnor, Prof. Nunn, Mansbridge, and others will take part. One day will be devoted to the account of educational experiments and another to discussion on nursery schools. On Sunday, Mr. Homer Lane, of the Little Commonwealth, will read a paper on "Self-Government and Religion." All further information can be obtained from the secretary.

MR. WALTER RIPPmann will deliver a course of lectures, with practical exercises, on English phonetics.

connection with the summer course for students of sign speech, held, under the direction of Miss Betty, at the Royal Albert Hall, on September 1st next. Intending students are requested to communicate with Mr. Rippmann at 45 Ladbroke Grove, London, W.11.

A MEETING was held on May 8th between representatives of the London County Council and members of Parliament representing London constituencies to the object of pressing upon the attention of the Government the inequitable treatment of London as compared with the rest of the country in the matter of grants from the Exchequer towards the expenditure incurred by local authorities on the national system of education, both under the present system of grants and under the system foreshadowed by the action of the Board of Education. A deputation waited upon Mr. Fisher on May 22nd to ask the Board of Education for an increased grant for education. Mr. Fisher said in reply that if the London County Council failed to obtain the good offices of the Board of Education with the Treasury towards obtaining an increased grant, it must show how it was going to find the money, and he added that he could not wait the Chancellor of the Exchequer.

On May 18th an extremely interesting demonstration was given by the students of the London School of Dance Eurhythms to a crowded audience at the Savoy Theatre. It was shown, particularly in the "plastic" conducting of melodies by single pupils, that by movements of limbs and body the rhythm and meaning of a musical composition may be interpreted others. In some cases the plastic responses to the music were spontaneous; in others the compositions had been studied in detail before their realisation in movement. Graceful effects of gesture and pose throughout striking, the more so in that they were achieved, not as ends in themselves, but incidentally in the attempt to express beautiful musical thoughts in movement. The essential difference between "plastic expression" and ordinary stage dancing seems to be that, in the former, the movement is all-persistent, and attitudes occur simply as pauses therein, whereas, in the latter, movement is often little more than the connecting link between studied attitudes. The demonstration furnished a stimulating revelation of the vital part that could be played in the education of every child by the cultivation of rhythmic movement and plastic expression.

Mr. FISHER is certainly working hard to keep alive and strengthen the present widespread interest in education. On May 4th he was at Plymouth explaining to a large audience that the education rate, though as yet it had not been recognised as such, is really one of the ratepayers' privileges, and should not be unpopular. "People," he said, "accept the rate for gas and water as an inevitable though a disagreeable fact or in a dismal scheme of Providence, but when it comes to the education rate their groans become audible." But the country cannot afford to allow its children to grow up undeveloped in mind, body, and character. Money must be spent freely upon the edu-

cation of the great mass of the population, on whose well-being the future strength and power of the country depend.

IN addition to the high prices and short quantities of printing paper now available, straw-board, which is necessary for the binding of books, has risen enormously in price, whilst a famine in that commodity threatens soon to deprive the publishing trade altogether of the power to bind books in cloth. At no distant date, therefore, it is probable that we shall see English books issued with paper covers, a state of things which may continue indefinitely, depending not so much upon the cost of this essential material as the length of time which must elapse, even after the war, before there are again sufficient supplies available. It is clear that in the very near future publishers, binders, and booksellers will have, in regard to the majority of books, to adapt themselves to a new order of things, and the public will have to be satisfied with books issued, as is so widely the custom on the Continent, in paper covers.

THE Board of Education has just re-issued (Cd. 8,505) the Regulations for Special Schools, i.e. schools for blind, deaf, defective, and epileptic children. Since the regulations were first issued, in 1909, certain important minutes have from time to time been issued modifying them. The changes in the regulations now before us are limited to incorporating these minutes, and to bringing the regulations on some points more into accord with the best existing practice. We note that during the last seven years new types of special school—e.g. open-air schools for tuberculous or delicate children—have come into existence, and the number of children in attendance has increased by 50 per cent. Open-air schools have been much encouraged by the Board, and their benefits have not been confined to delicate children, but have been increasingly extended to all types of special school. In them the importance of manual work has been emphasised. Instead of being regarded as a distinct subject, it is tending more and more to become the basis upon which the whole work of the school is built up. So much for the Board's regulations for special schools. But it is scarcely possible to read them without speculating as to whether the educational treatment of abnormal children does not furnish valuable hints for the treatment of normal children. May not the ordinary classroom, with its artificial devices for ventilation, and its stiff arrangement of desks and benches, be the material embodiment of an order of things which is changing under our eyes?

THE Kent Education Committee last October appointed a special sub-committee to consider the recommendations contained in the interim report of the Consultative Committee on Scholarships for Higher Education (THE SCHOOL WORLD, September, 1916, p. 336), and this sub-committee has issued a report, a copy of which has been sent to us. The sub-committee urges that a strong effort should be made immediately to secure greater co-ordination between the efforts of teachers and administrators concerned respectively with elementary and higher education. No real improve-

ment can be effected, it maintains, without a reduction in the size of classes in elementary schools, and the contingent necessary supply of teachers of the right stamp will not be forthcoming until there is a substantial improvement in the salaries and status of the whole teaching profession. Scholarships, the sub-committee insists, should be regarded not as a measure of charity, but as a national investment, and the provision of higher secondary education should be improved and extended.

BEFORE the war the attitude of the majority of business men towards proposals for placing upon a decimal basis the coinage and weights and measures was one of indifference or hostility. Although in certain directions the competition of other nations in the markets of the world was beginning to be acutely felt, trade on the whole was good, and the wealth of the nation was increasing by leaps and bounds. What need, then, was there to make any change in the machinery of a system producing such excellent results? The war, however, is exerting a great educational influence, and the report of the Decimal Association for 1916 indicates that the business community at large is at last coming to realise that amongst the reforms which must be effected in our business system if we are to retain a leading position amongst the nations of the world, that of adopting the system of weights and measures now used by most other countries holds a foremost place. During the past year resolutions advocating the decimalisation of the coinage and weights and measures have been passed by leading representative bodies throughout the kingdom, such as the Executive Council of the County Councils Association, the Associated Chambers of Commerce, and many trades' associations. Indeed, the engineers form the only powerful group which has not yet expressed a definite collective opinion in favour of the proposals. It appears further that the Dominions are ready to make the change so soon as it has been adopted by the Mother Country, and New Zealand has already legislated with this object. There can be no controversy regarding the system of weights and measures to be adopted—the metric system is the only one possible. There is, however, room for difference of opinion with regard to the coinage, and six different proposals have been put forward and discussed. The committee has come to the conclusion that the most practical scheme would be our maintaining the sovereign as unit and dividing it into ten florins, with the florin divided into 100 cents. The matter is very urgent, and we are glad to see that during the past year the association has been strengthened by the accession of many new members, several of whom hold positions in the present Government.

THE Master of Balliol is contributing to the *English Review* a series of articles on the education question as a part of a scheme of Imperial reconstruction. The first article is published in the May issue, and is introductory in character. He quotes the definition of education as "what remains when we have forgotten the things we learned," and in the light of it discusses elementary schools and the continuation of education from fourteen to eighteen; and he will in

future numbers have something to say about teacher numbers. After a passing consideration of the curriculum of the elementary school, the following cardinal principle is enumerated:—"Develop the personal relation between the teacher and each child; utilise the local environment throughout the school life; replace half the school lessons by out-of-school substitutes; train the child to use its own powers—that is, teach it to think for itself." In connection with technical schools we find:—"We have to produce not merely good workmen, but good citizens, who feel they are doing honourable work which is of public service, the old feeling of the 'workman's craft.'" Like everything else the Master of Balliol writes on education, the article is thought-impressive and may be commended to the attention of teachers.

PROF. JOHN DEWEY addressed the annual meeting of the U.S. Public Education Association on the subject "Learning to Earn: The Place of Vocational Education in a Comprehensive Scheme of Education." The address is printed in *School and Society* for March 24th. Contrary to the general opinion, public education has always been largely vocational. It serves a poor ideal of industry, and is socially inefficient. Higher education began as professional training; some portions of this training ceased to be vocationally useful and then became a staple of a cultural and disciplinary education. Elementary education has been not only "learning to earn," but a badly conceived learning, of which the materials and methods of study have been determined so that the learner may add to the earning power of others rather than himself. The modern demand for vocational and industrial education is apparently for an entirely new thing; but, in fact, it is a demand that the present industrial education be modified to suit the changed conditions of modern industry; not a demand to supplant or supplement a liberal and generous education already supposed to exist. The question is what sort of industrial education there shall be and whose interests shall be primarily considered in its development. Is vocational training to improve economic conditions or to supply a better quality of labour for industries which now exist? The learner is to earn more, but for whom? For his employer or for himself? In accordance with the answers to these questions there will arise quite different educational schemes.

THE conception that the primary object is to prepare more skilled workers for the present system of industry, Prof. Dewey thinks, an attempt to be made to provide training for certain specific callings. Further, it will tend to ignore civics and history, which make future workers aware of their rights and claims as citizens in a democracy; and so far as these subjects are studied at all they will be used to glorify a blind patriotism which counts it a privilege to defend things in which the workers themselves have little or no share. As regards method, this same conception will lay stress upon routine and drill to secure purely mechanical efficiency, and is in opposition to the larger view of education which would develop an intellectual ambition and initiative which are pri-

ably fatal to contentment in routine work. Finally, the narrower outlook will reduce guidance of the learner to merely one object—the finding of a job. On the other hand, the wider view would result in such a reorganisation of existing schools as will give all pupils a genuine respect for useful work, an ability to render service, and a contempt for social parasites. It will aim at securing freedom rather than docility, initiative rather than automatic skill, insight and understanding more than capacity to recite lessons or to execute tasks under the direction of others. The issue lies between education and training, between a democratic and a feudal control of industry.

"EDUCATION for Initiative and Originality" is the subject of a lecture, summarised in the current *Columbia University Quarterly*, given by Prof. E. L. Thorndike before the staff of Teachers' College. Independence is not unreadiness to follow or obey other men, but a readiness to contribute to good causes something more than is suggested by others. Initiative is not unreadiness to wait or be modest, but a readiness to take promising risks and do ten dollars' worth of work for a dollar. In his experience original thinkers in science, medicine, and other walks of life are extraordinarily competent in routine work and extraordinarily strong in mere knowledge. The truly independent thinker does not make less use of other men's ideas than the servile thinker, but more. A good definition of intellectual independence is "reasoned dependence." It follows, then, that the child has to be educated to follow others and to become aggressive and enterprising upon certain occasions. Who should be followed in a democracy? There is no answer but "the impartial expert." Cannot pupils of the high-school age be taught that the essentials for leadership are expertness and impartiality? It is wrong to assume, as is often done, that when a pupil tackles a task demanding initiative and self-direction, it is the attempt rather than its success that counts; our toleration of failure outright seems to indicate that the tasks we set our pupils are badly selected. In our thinking about education we should replace the word "self-reliance" by "reliance upon facts," and "self-direction" by "readiness and ability to begin to think and experiment."

THE current number of *Science Progress* (Murray, 3s. net) is full of good things. Among the articles perhaps the most generally interesting is that on "Osmotic Pressure in Animals and Plants," by Mr. W. R. G. Atkins. In plant cells an osmotic pressure of from fifteen to twenty atmospheres is common, while in animal cells the osmotic pressure does not exceed  $\frac{7}{3}$  atmospheres. The difference is correlated with the presence of a comparatively inextensible wall in plant cells, and this in its turn with the normal power of assimilating carbon dioxide. "Polymorphism," by Mr. F. D. Chattaway, though more technical, is a readable and helpful essay, leading to the conclusion that polymorphy is a general property of crystalline matter as universal as condensation and freezing. In a popular article on "Scratches on Flint," Mr. J. Reid Moir gives evidence that striation may be imposed on a flint without the intervention of

ice, and even without the "enormous pressure" which is usually invoked to account for them. Mr. G. W. Bulman criticises the assumption—on which Prof. Joly bases his estimate of the age of the earth—that the original ocean was saltless; and Prof. F. J. Cole and Miss Nellie B. Eales contribute a statistical analysis of the literature of comparative anatomy. Besides the articles mentioned, we have the usual valuable summary of recent advances in science, editorial notes (with vigorous comments on the national neglect of science), short essays by Messrs. Bruce Cummings and Philip E. B. Jourdain, and reviews of new books.

A RECENT issue of *School and Society* contains a report of the annual address to the Virginia State Teachers' Association. Prof. C. G. Maphis, of the University of Virginia, demands that a constructive campaign be launched for better school facilities; he enumerates for immediate consideration suggestions for more money for the schools, more and better supervision of the schools, compulsory education, better-trained teachers, better salaries, and longer school terms. Four times as many new teachers are needed each year as all the normal schools combined can supply from their graduates, and yet the graduates find so great a difficulty in securing appointments that the normal schools must maintain an active employment bureau, which frequently fails to assist all the graduates into positions for which they have been trained. The explanation of this disastrous circumstance lies in the attitude of the school authorities, who give the best positions to local favourites or to teachers who lack professional training and are willing to accept lower salaries; the magnitude of the defects of education in Virginia may be grasped from the fact that the average annual salary of the white teachers of all grades is £59.

#### SCOTTISH.

WRITING last year in the October issue of THE SCHOOL WORLD, Dr. Parks, Portsmouth, had a most suggestive article on "The Admiralty Method of Training Dockyard Apprentices," as described in No. 32 of the Education Pamphlets issued by the Board of Education. While urging the general extension of this principle of training to all trades and occupations, he stated that an indispensable element of success would be insistence on a definite educational standard at entry. This, in the case of dockyard apprentices, was secured by the present competitive examination, but Circular 490, which has just been issued by the Scotch Education Department, suggests an even better way. An agreement has been arrived at between the Department and the Admiralty whereby the latter agrees to place a limited number of vacancies for apprentices in Rosyth Dockyard at the disposal of holders of the Intermediate certificate. These candidates would be selected according to the marks gained by them at the examination for the certificate, subject to their fulfilling the usual conditions as to age, character, and physical fitness. Sir John Struthers must be congratulated on taking the first step towards making the examinations for

entrance into the Civil Service an integral part of the educational system of the country. It is only a small step, but it is undoubtedly a step, and it will be much easier to take other and bigger steps by and by. The Department has thus not only broken with tradition, but set the seal of its approval on the principle involved in the dockyard system of training. Tangible evidence of this approval is given by the intimation to secondary education committees that the Department will be prepared to accept the dockyard school as an institution at which bursaries may be held in terms of the Education (Scotland) Act. The extension of these principles to govern entrance to all grades of the Civil Service would do more to vitalise education than the provisions of the most perfect education reform Bill.

THE Secretary for Scotland, Mr. R. Munro, M.P., announced in the House of Commons recently that a sum of approximately £500,000 would come to Scotland as an equivalent on the usual basis for the new education grant to England. This money would form part of the Education (Scotland) Fund, but a substantial part of it would be earmarked as a first charge upon the whole fund for the improvement of the salaries of teachers in all classes of schools in receipt of grants. The balance of the money would go to the maintenance of efficient centres of secondary education, the better staffing of rural schools, the more liberal provision of bursaries in rural areas, and improved medical treatment. Teachers are naturally most interested in the first charge on the fund, and are awaiting with lively interest the practical interpretation of the words, "a substantial part." In their view the whole sum would not be sufficient to provide a satisfactory scale of salaries for a self-respecting profession, and the enumeration of so many other claimants of boundless capacity, or rather voracity, has given pessimists a splendid opportunity for the exercise of their special gifts. Against all this has to be set the fact that the Department is genuinely and keenly interested in the improvement of teachers' conditions, and will devote to that purpose every penny that it can persuade the Treasury to set free.

THE Business Committee of the General Council of Edinburgh University has had under consideration for some time the question of the developments that should take place in the University after the war. As the subject was big it very wisely remitted various aspects of it to sub-committees, and a series of highly valuable and interesting reports is the result. Among the subjects dealt with are the Preliminary Examination, bursaries, arts curriculum, research, relation of universities to other central institutions, and status of lecturers. To the solution of all these questions valuable suggestions and proposals are made, all of them in line with the prevailing trend of educated opinion. The University Council approved of the reports generally, and ordered them to be forwarded to the University Court for consideration.

AT the last meeting of the Western Branch of the Secondary Education Association of Scotland a discussion took place on the papers set at the recent

leaving certificate examinations. The general tenor of the criticism was in conformity with that expressed in these columns last month. The examinations, good as they were of their kind, were held to belong to past order of things. The teacher's verdict should be the main factor in assessing the result, and the elaborate machinery of examinations should be swept away. So long as the present system continued members recommended alterations in the duration of the papers, in the character of the English and French papers, and in the range of the history and geography requirements.

GLASGOW University Court at a recent meeting had under discussion the draft ordinances for the foundation of two new chairs in French and German. The principal, Sir Donald MacAlister, stated that the Court had an assured income for teaching purposes of more than £1,100 in each case. He proposed that £800 should be fixed as the salary of each professor, and that the balance be applied for lectureships. This was ultimately agreed to. A representation was submitted from the University Council asking that the Court should consider the creation of a faculty of commerce. The principal stated that the Court some years ago had been in communication with the governors of the Commercial College on this subject, and he moved that they should again open up communications with them. Dr. Hutchison said that there was urgent need for a campaign to educate business men in this country in regard to the activity of their rivals abroad.

THE Scottish School Boards Association held a special meeting in Glasgow to discuss a variety of questions in relation to educational reform. The Rev. Dr. Smith, who presided, said that the Education Bill for Scotland was already drafted, and dealt among other subjects, with larger areas a National Council, and compulsory continuation education. A resolution was passed, on the initiative of the Leith School Board, declaring that in any scheme of education reform provision should be made for co-ordinating the examinations of the intermediate and secondary schools of the country with the requirements of the Civil Service Commissioners. It was further agreed to ask chambers of commerce and other commercial bodies to make the possession of the Intermediate certificate an essential requirement for all young persons entering on commercial pursuits.

#### IRISH.

THE proposals of Mr. Fisher for the improvement of English education have aroused a strong feeling in Ireland that equivalent grants should be made for Irish education. A good many years ago the State authorities in London decided that grants from the Treasury for England and Wales, Scotland, and Ireland should be given in the ratio of 80, 11, and 9. While England and Wales and Scotland have received their shares, the bargain has never been observed in regard to Ireland. This has caused a grievance very keenly felt in Irish secondary education, and now that the grants for education are being raised across the water an agitation has commenced to remedy the injustice. There ought to be no doubt about the

satisfaction of Ireland's claim, but Mr. Duke, in reply to questions in the House of Commons, has merely said that he is consulting educational authorities in Ireland about it. In Scotland things are managed differently, and its claim has been admitted and the sum fixed without delay at £500,000, although how much of this will be given to secondary education has not been determined.

The case for Irish secondary education in relation to Treasury grants is as follows:—The English grant for 1916-17 was £820,000; Mr. Fisher proposes to grant a further £433,900 yearly, making an annual grant of £1,253,900, the equivalent of which, on the basis of 9 to 80, would be £141,000. In addition to this, Ireland has a claim for the cost of administration, inspection, and examinations to be paid by the Treasury as in England; as this amounts to £25,000, the total claim is for £166,000. As Ireland receives from the Treasury £29,000 for science and art in secondary day schools, and £40,000 as a teachers' salaries grant, there is an offset of £69,000 to be deducted from £166,000. This leaves, in round figures, a claim for an additional £100,000 per year.

MEETINGS are being held in support of this claim in Belfast, Dublin, and Cork, in which representatives of heads of schools and assistant-masters, both Roman Catholic and Protestant, of the universities, members of Parliament, and business men have taken part. Coupled with this demand is a widespread feeling in favour of a sweeping reform of Irish education, but the Treasury grant should not in any case be made dependent upon the carrying out of such a scheme.

THE Roman Catholic Bishops, at a meeting of their Standing Committee, held after Easter, passed the following resolution:—"We request the Irish members of Parliament to insist on the just claims of Ireland to a grant which shall be equivalent in proportion to the population to any grant which may be made for educational purposes in England, and to see that the full amount of the Irish grant be allocated to educational purposes."

THE Queen's University, Belfast, has been presented by Mr. Henry Musgrave, of Drumglass House, Belfast, with a sum of £10,000 for the endowment of a chair at the University for the teaching of Russian language and literature.

At the closing public meeting of the session in connection with the M'Crea-Magee College, Londonderry, the president, Prof. Leebody, reminded intending candidates for the ministry not to overlook the fact that study in this college led to the attainment of a university degree of recognised status. By affiliation with Dublin University, students could pass from the college in Londonderry to Trinity College, Dublin, in the latter part of their undergraduate course, and a good number were doing so. In the five years from 1911 to 1915 seventy-five students, most of them divinity students, took their degrees in Trinity College, twenty-seven of them with honours, and nine with the highest possible honours.

THE Most Rev. J. H. Bernard, Archbishop of Dublin, has been appointed a Commissioner of Intermediate Education.

THE programme of the Irish Training School of Domestic Economy for the session 1917-18 has been issued by the Department of Agriculture and Technical Instruction. The school is situated at St. Kevin's Park, Kilmacud, Stillorgan, Co. Dublin. The entrance examination will be held on June 26th-28th; the school session begins on August 23rd and closes on June 20th of next year. The course lasts for one session, with a further two years' course of training for teachers of domestic economy. The fee is £20 for the session, inclusive of tuition, residence, and board.

#### WELSH.

H.R.H. THE PRINCE OF WALES has given £100 to the fund for commemorating, by erecting new science buildings at Bangor University College, the heroism of North Wales men who have fallen in the war.

THE Cardiff High School inquiry has been closed. The committee laid no blame on anyone concerned, thereby affording a negative kind of satisfaction which will cause some amusement to those who know something of the circumstances; it then settled the question of the vacant headship in a happy and ingenious fashion by unanimously offering the post to the candidate who came second on the list when the late Major Davies, who was killed before taking up the work, was appointed. The new headmaster is Mr. J. R. Roberts, headmaster of Ruabon County School, who was, before he went to Ruabon, a master at Harrogate College for many years; he was educated at Ruabon and Bangor, and took a London degree in classical honours.

PRINCIPAL JOHN, of Caerleon Training College, writes to the papers advocating the employment of disabled soldiers as teachers, of course after a period of training. It is an excellent idea, but its application will require some caution. Teachers yield to no other class in patriotism and in their desire to see those who have suffered for their country justly and generously treated, but it behoves them to see that this is not used to provide a large supply of imperfectly qualified and ill-paid workers. It is only the shortage arising from the war that has at last compelled the community to pay some attention to the scandalous way in which teachers have hitherto been treated, and there are only too many education authorities who think that they can make competent teachers out of as many as they can induce to pass through their "centres" and training colleges. On the other hand, there are some who raise the cry that "we must have better teachers, and must therefore pay them better." This is a libel on a hard-working and under-paid profession: the first thing needed is to put right the conditions under which present teachers are working, and give them opportunities of service that are at present denied to them, and then to ensure that those who join their ranks hereafter shall be both properly qualified and properly remunerated—not bribed into the profession in their youth and left for the remainder of

their days in a hopeless "blind alley." And it is amazing to find Principal John arguing that teaching is an occupation especially suitable for disabled soldiers because it "makes very slight physical demands upon the teacher." On the contrary, it is a most exhausting and harassing occupation; the teacher who is doing his work earns his holidays thoroughly well, and also more money than he at present gets to enable him to make good use of them, for both his own sake and that of his scholars.

THE vacancy in the headmastership of Neath County School, caused by the death of Mr. J. G. Davies, has been filled by the appointment of Mr. J. W. Jones, headmaster of Ystradgynlais County School. The appointment, which did not come as a surprise, is very popular among the many friends of Mr. Jones, who is a prominent figure in local denominational and political circles.

TEACHERS of all grades are taking steps to see that the proposed new Treasury grants are properly used, and they should not fail to note the strong hint in the Board of Education's new regulations that unless this is done this year other measures will be taken later. In Wales the conditions are the same for elementary schools as in England, but a different scale of grants is proposed for secondary schools. The Welsh grants are to be, from ten to twelve years of age, nil; from twelve to eighteen years, £5 10s. and £8, instead of £4 10s. and £7. The explanation is that the total grants are not increased, but allowance is made for the fact that there is a much larger proportion of pupils of age ten-twelve in the English schools.

GRATEFUL as teachers are for Mr. Fisher's proposals, they note with still greater gratitude that he intends them as temporary measures, pending the establishment of better conditions. The 14 per cent. for secondary-school teachers, for instance, will not even bring the purchasing power of salaries to its pre-war level, and it is quite certain that a restoration of pre-war conditions will not be regarded as an adequate improvement. The associations must press for the establishment of their very reasonable minimum scales when education is reorganised after the war. Nothing less will suffice.

## RECENT BOOKS ON THE HEALTH OF THE PUPIL.

(1) *Crowley's Hygiene of School Life.* By C. W. Hutt. 428 pp. (Methuen.) 3s. 6d. net.

(2) *The Principles of Health Control.* By F. M. Walters. 476 pp. (Heath.) 4s. 6d. net.

(3) *The Care of the School Child.* Edited by J. Kerr. 230 pp. (National League for Physical Education.) 2s. 6d. net.

(4) *The Nation of the Future.* By L. Haden Guest. 115 pp. (Bell.) 2s. net.

(5) *Sex Education.* By M. A. Bigelow. 251 pp. (New York: The Macmillan Co.) 5s. 6d. net.

(6) *The Wolf-Cub's Handbook.* By Sir R. Baden-Powell. 230 pp. (Pearson.) 1s. 6d. net.

(1) THE great stress which has fortunately been laid in recent years on the hygiene of school life is exemplified by the able and comprehensive treatises on the

subject now available, several of which have been noted in these columns in recent months. Among these treatises that of Dr. Crowley, written when he was medical superintendent to the Bradford education authority, has undoubtedly taken high rank. Originally published in 1910, it now appears in revised and partly rewritten form, and with a new chapter on the school medical service in relation to juvenile employment, the revision and the new matter being the work of Dr. C. W. Hutt. The reputation of the writers is in itself a guarantee that the work is sound. The appendices, most of which relate to official regulations, will be found useful for reference.

(2) The distinguishing feature of Mr. F. M. Walters's "Principles of Health Control" is the emphasis it places upon corrective work. Compared with the usual text-book of hygiene, it is eminently practical, or, one might say, pragmatic. No theoretical points are raised which have no practical issues, and the question which always stands first and foremost is: What direct control have I, or what control is exercised by social agencies on my behalf, over the state of my health? An effort has been made "to place every phase of the subject upon the basis of cause and effect, and to eliminate as far as possible the interminable maze of guesswork which is the bane of much hygiene teaching." We think that the book is excellently conceived, and that the plan of its conception is well worked out in detail.

(3) The little volume entitled "The Care of the School Child" contains a course of lectures delivered last summer under the auspices of the National League for Physical Education and Improvement. Mr. Cyril Cobb, chairman of the London Central Children's Care Sub-Committee, surveys the general situation in his introductory lecture, and this is followed by lectures, each of them by a distinguished expert, on the physical development of the school child, general personal hygiene, the care of the eyes of the teeth, and of the nose, ear, and throat; mental hygiene, malnutrition, the tubercular child, infection and the crippled child. These outstanding aspects of the subject are dealt with in a manner at once popular and scientific. As Bishop Boyd Carpenter says in his introductory note, the lecturers have given freely and readily the ripe fruits of their experience. We hope the book will be widely read, not only by those directly concerned, but by the public at large. We note with approval the statement of Mr. R. A. Bray, who contributes the concluding chapter on "After-care," that "the problem of health, whether the health of the infant, the child, or the adolescent, is a problem of poverty, and while poverty is with us, do what we will, our ideals are destined to fall short of fulfilment." This is a truth which must, as Mr. Bray says, remain with us after the war.

(4) In the book entitled "The Nation of the Future" Mr. Haden Guest has brought together some extremely interesting papers based upon his experience as a school medical officer. Mr. Guest has the happy gift of a graphic style, which he uses with such excellent effect that a reader who has never been present at a school medical examination may vividly realise the scene. Not only the details of a medical inspection, but also the methods of recording the results, are fully explained. The author holds that all this work is essential to a scientific treatment of the problem of physical welfare, but he goes on to show that the school treatment centre, or school clinic, is the logical sequel, made inevitable by parental poverty, ignorance, or indifference. Like Mr. Bray, he believes poverty to be the chief disease of humanity. Mr. Guest wrote these papers before the war, but his experience with the R.A.M.C. "somewhere in

France" makes him realise more intensely than ever the dominating importance in national life of all that affects the child. He wrote his preface in a camp in France from which soldiers are sent up to the front, where they are equipped, he says, with everything that can be given, but "they cannot be equipped with physical health and efficiency greater than their childhood has left them."

The books here under review have been brought together by reason of their general bearing upon the path of the pupil, but the inclusion of Prof. Bigelow's work on "Sex Education" can be justified only by understanding the term "health"—as we well may include moral as well as physical health. For the author deals with the problems not only of the hygiene, but also of the ethics, of sex. During the past year or two we have had occasion to notice several works on these much-discussed subjects, but we do not recall any which we can recommend so warmly as this one by Mr. Bigelow, professor of biology and director of the school of practical arts at Teachers' College, Columbia. For comprehensiveness, clearness, and sanity we think it stands first. We do not always agree with the author, but when we differ we do so with respect, and with the reflection that there are certain points upon which general agreement will ever be reached, because the methods of teachers will vary according to their temperaments, and according to the concrete situations in which they find themselves placed. Some general chapters are followed by chapters containing advice regarding pre-adolescence, early adolescence, adolescent boys and young men, and maturing young women. A chapter on "Criticisms of Sex Education" meets fairly and wisely the objections that have been raised from various quarters. A valuable bibliography forms the concluding section of this excellent work.

Understanding again by "health" moral as well as social health, we need not apologise for including Mr. Baden-Powell's "Wolf-Cub's Handbook" in the present list. He calls it "a meal offered by an old Wolf to the young Cubs." The name of the "old Wolf" is a household word, and his work in this direction needs no explanation or commendation from us. We are of those who believe that he has done a great thing for education by originating the Scout movement, and we are not proud that it was reserved for one who is not a teacher to discover the possibilities, for clean and healthy boyhood, that lie in the multifarious activities of this organisation. We commend this handbook to all teachers and parents of young boys. Even if they cannot organise a "wolf pack," or do not desire to do so, they will find in these pages abundant help in the wise management of boy life.

#### REFORMED METHOD LATIN BOOKS.

*Latin Plays for Student Performances and Reading.*  
By John J. Schlicher. Pp. vii + 213. (Ginn.) 3s. 6d.  
SEVERAL Latin school books which have recently been published indicate the need for reformed textbooks which all who are teaching on reformed lines must feel. These have been briefly noticed, not always with approval, in our usual columns; we give the present volume a somewhat longer notice because it shows very clearly several of those tendencies in the reformers' books which we can view only with dismay. In schools of the future boys and girls will no longer wend wearily through a few chapters of Cæsar or Livy; until they are of an age to read the classical authors themselves with a certain amount of fluency and

enjoyment, the reformers' idea is that they should be nurtured on something easier than the classical authors, but a good preparation for them—in a word, on the reformers' own text-books. We must keep a critical eye on these text-books then.

The present volume, which is beautifully printed, on good paper, and strongly bound, contains seven plays, brief notes, and a vocabulary. The preface tells us that "they are, to a certain degree, progressive in difficulty. But they are all sufficiently simple to be read without much trouble in the second year, or even at the end of the first." They are therefore intended for children, and it is as such that we shall chiefly regard them. But they have also been written "chiefly for performances by students," hence the elaborate stage directions (in English, or American) throughout. Regarded as such the sentimental love *motif* (especially of the second play, entitled "Tirones") may be highly successful, but it is out of place in a school book. One of the seven, "Cicero Candidatus," should act well. But we are here concerned with the volume as a school book, and its chief fault is its failure to produce a Latin atmosphere. There are certain definite details which are not Roman, as, for example, the Iudex in "Saccus Malorum" (the first play) who assumes the functions of a *praetor*, or the wishy-washy Cæsar who brings the "Tirones" (the second play) to its happy ending. But far more important than such details is a certain intangible modern tone. If "gravitas" is typically Roman, sentimentality is typically modern, and the tone of this volume is nearer to the latter than to the former. Reformers will do a great disservice to classical education if they produce books of this nature. Moreover, the language is not what it should be; we need *simplified Latin*—the period is too complex for young children—but it must be simplified *Latin*, and not English expressed in Latin words. Throughout these plays, for example, we have an English order of words, and this is perhaps the greatest factor in producing that unhappy result of which we have to complain. Nor is the Latinity unquestionable. "Cum" with the subjunctive in past time to denote a purely temporal connection is universal, and there are various little phrases, such as *lege epistulam clārā vōce* (where a Roman would surely have said *recita*), *quam multa māla ēdisti?* (p. 22), *nē hoc quidem semper facit mātrimōnium bēatum* (p. 89), *sine dubio magnam pecuniam habet* (p. 91)—why not *multum pecuniae?*—*dūrius est hoc ferre cum sis rēgis filia simul et pulcherrima omnium puerārum* (p. 161), etc., which we feel sure would never have been heard from the lips of a Roman. *Si grānum fortitudinis in corpore hābēs*, which occurs on p. 81, is not Latin at all, and we have suspicions that *cōflecta* on p. 42 is meant to describe ready-made clothes!

Long quantities are marked, and yet *magnus*, *maior*, *maximus*, *fame*, *signum*, *pugna*, *benignus*, etc., occur over and over again with no mark. The notes consist chiefly of aimless translations, such as *Omnia sunt parata: everything is ready*; *Nihil harum rerum intellego: I don't understand any of these things*—a remark which we feel inclined to re-echo. The best thing about the book is the neat use of the verses, especially those from the Epithalamium of Catullus.

*Teaching of Geography to Young Children.* Four-page leaflets. By E. G. R. Taylor. (The Modern Geographers.) 3d. each.—Miss Taylor writes brightly and interestingly about "Life in Other Lands," "All Sorts of Things about Rivers," etc. These leaflets, as well as "The Geography Teacher's First Aid" (bi-monthly 1*½*d.), from the same publishers, should be useful to teachers.

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*Spanish Reader of South American History.* By E. W. Supple. xi+375 pp. (New York: The Macmillan Co.) 4s. 6d. net.—The number of good school texts for the study of Spanish is limited, and interest in South America is growing rapidly. For both reasons the publication of this book is welcome. It contains a series of nine selections from the works of Latin-American writers of literary eminence, which portray some of the best-known episodes in the history of South America, from the period of the Conquistadores to the present day. Mr. Supple has added footnotes (in Spanish), Spanish questions on the text, and passages for retranslation. There are also notes giving help in translation and a Spanish-English vocabulary. The book is extremely well "gotten up" (as our American friends say), and contains a few good reproductions of photographs, and, as frontispiece, a map of South America.

*A First Russian Reader.* By F. Freeth. vii+79 pp. (Kegan Paul.) 2s. 6d. net.—The first part of this book contains lists of "words commonly used," with English renderings, and an attempt to represent the pronunciation, which is not altogether successful; we do not like "ne-dvale-ye," "pawl-ye," "mwil-o." Part ii. consists of easy sentences, and part iii. is curiously entitled "Exercises"; it contains a number of extracts in prose and verse (twenty-three pages), with the English translation on the opposite page. For the beginner such reading material is always useful, as it enables him to extend his vocabulary, one of the great difficulties in learning Russian.

*Progressive German Idioms.* Compiled by S. Tindall. 112 pp. (Oxford University Press.) 1s. 6d. net.—The first section contains "grammatical idioms"; the second, "common idioms," "verbs of mood," "time and dates"; the third, "less common idioms," "particles"; the fourth, "proverbs" and "similes." On the whole it is a satisfactory piece of work; considerable care has been taken to supply good English renderings and the proof has been well read. It is doubtful whether it was wise to give two lists of idioms; it would surely have been more convenient to combine them, and to mark by means of an asterisk the more common. It is obvious that such lists cannot be exhaustive; but there are some quite common difficulties ("aufheben," "einverstanden," "versprechen," etc.) the omission of which surprises. In the sections dealing with particles it was a distinct mistake not to mark with an accent the particles ("ja," "doch," etc.) when they are stressed. Occasionally the renderings are a little heavy; for "Haben Sie heute etwas vor?" "Anything on to-day?" is more natural than "Have you any plan for to-day?" and for "Mit ihm ist nichts anzufangen" we prefer "He is hopeless" to "There is no doing anything with him." The term "proverbs" is somewhat loosely used, as it is applied to "A little knowledge is a dangerous thing," "Das, was man sehnlichst herbeiwünscht, kommt nur langsam," "Appearances are deceptive," "Es muss ein bedauernswertes Herz sein, das sich niemals freute." Under similes we note that "He is as sound as a bell" is rendered "Er ist so gesund wie ein Fisch im Wasser," when "kergesund" was available; and it is implied that "as true as steel" has the same meaning as "as good as gold." "He looked as solemn as a judge" is quaintly rendered by "Es ist ihm wohl etwas über die Leber gekrochen," which really means "I expect something has put him out."

### Classics.

*The Days of Alkibiades.* By C. E. Robinson. xxiv 301 pp. (Arnold.) 5s. net.—Mr. Robinson is to heartily congratulated upon having written about classical things in a most pleasing and quite novel fashion. There has been nothing quite like the present volume since Becker's "Gallus" and "Charicles," and these are not very similar. There is no narrative running right through "The Days of Alkibiades," though, of course, the eponymous hero occurs in frequent episodes, as also do other characters; but we are treated to a series of semi-imaginative scenes in the gymnasium or theatre, at a dinner party, or in the law court which give a vivid presentation of ancient life. We say "semi-imaginative," for Mr. Robinson has neither confined himself to slavish transcripts of scenes described in ancient authors nor allowed his imagination to run wild; *καλῶς κείνται*, as Plato might have said. And the skill with which little touches are worked in, from the Empusa of Aristophanes to the drinking song of Harmodius and Aristogeiton, is really remarkable. We wonder, however, how the book will strike the reader who has no Greek, and it is obviously, at least in part, intended for such a one. If there has been a tendency among English scholars to idealise the Greeks—to see the average ancient Athenian through the medium, as it were, of Pericles' funeral oration—Mr. Robinson is no victim of the tendency. Perhaps he goes to the opposite extreme; his sources have been to a large extent comedy (which wisely has refrained from cumbersome footnotes), and I think that he has not discounted that fact sufficient. Some things will cause offence, as, for example, the reference on p. 24 to Aristotle: "This is perhaps what Aristotle, that incorrigible snob, denied that anyone who spent his life in such labour could ever be called a full man." The italics are ours, but what will the English reader make of that sentence? As a rule, Mr. Robinson shows himself well versed in all sides of classical learning, but we wonder why in the chapter on Delphi he has given no explanation of how the oracle was able to give such good answers to the various questions set it, and the archaeologist will probably not agree with the suggestion in a footnote on p. 62 that the "hieratic simper" (as he is used to call it) on the early Greek statues was "considered lifelike expression." But these are details. Mr. Robinson has, on the whole, produced a fascinating book.

*The Rhesus of Euripides.* Edited, with introduction and notes, by W. H. Porter. lii+97 pp. (Cambridge University Press.) 3s. 6d.—Both students and scholars will be grateful to Mr. Porter for this edition; with short compass it contains very useful summaries of the many controversies which the play has occasioned. As to its authorship, Mr. Porter argues that it is a genuine play of Euripides, and his introduction, after a comparison of the play with the "Doloneia," discusses the Rhesus-myth at length. Throughout Mr. Porter shows a very scholarly, if somewhat over-cautious, attitude of mind; there are details with which many will disagree, but these are inevitable in such a work. The text, we are glad to note, is almost identical with that of Prof. Murray. Although we are assuming, the volume is one which eminently deserves the gratitude of scholars.

### English.

*A First Book of English Prose for Repetition.* By J. H. Fowler. 56 pp. (Macmillan.) 1d.—We are delighted to see that Mr. Fowler lends his authority at last to an attempt to popularise prose repetition in the schools have needed it for many a year. On

the other day we noticed a similar volume, and anything we can say to help on the forgotten practice of memorising even long passages will be said gladly, but when you are fighting a prejudice it is well to make a much longer introduction detailing at least three ways in which prose memorising is to be approached. Until now schoolmasters as a whole neither now, learn, nor set prose repetition, though some of the Forms may be able to repeat the whole of Webster's speech over the Athenian dead. The note stuck in the introductory remarks is much too apologetic; the accurate knowledge of prose means the accurate knowledge of great thought; and for a long time we have memorised Bible prose. Mr. Fowler averspares Bible pieces with others, a practice that has been continually recommended to anthologists, and recommended until the last few years in vain; and now it is looked on by many with the gravest suspicion. The editor will not mind our saying that his little book is far too short, and that it would be improved if a long list of other passages suitable for memorising had been added. Perhaps, however, the publishers will see their way to produce an *Edisenda* or the higher Forms, a book of some 300 pages in which ancient as well as later prose might be worthily presented. The little volume contains forty-three extracts; but it is curious to note that Mr. E. H. Blakeney's "Prose Extracts for Repetition" agrees in no single instance with Mr. Fowler's. This in itself partly shows how far we are away from an anthology of short prose pieces.

*Poetry for Repetition*. Selected by Ed. H. Blakeney. 116 pp. (Bell.) 1s. 6d.—This little book, with its impassioned forewords, contains 117 passages, and of these probably fifty will be new to the ordinary reader. Mr. Blakeney might have made all the rest easier, and so entirely have escaped the charge of being Blakeneyed. A few notes and a curiously original "Index of Poets" are added. Is it not time that we should stop quoting Arnold's "inefflectual angel" in reference to Shelley? The words are but catchwords, and Shelley did not beat his wings in vain. Indeed, he is slowly coming into his own. It is very refreshing to find so much unquoted material, and that though the books drawn upon are not many. It looks like a welcome protest against the school dictum, "Now, there's something here you must admire."

*Some Minor Poems of the Middle Ages*. Arranged by M. Segar, with Glossary by E. P. Paxton. 71 pp. (Longmans.) 2s.—This is probably a sequel to the modernised medieval work noticed in these pages ("A Medieval Anthology"); but there is plenty of room for it, even if it had been longer. Very few people can afford Wright and "E. E. T. S." and Ritson. There does not appear to be any "find" in this collection; it has been known before. Yet there are many little things that might have been added, such as the "Ivy" songs and "The Old Man and the Oak"; it is a pity that the tiny gems should not be again and again reproduced. Footnotes are added, and an excellent glossary. Surely "resouens" on p. 14 is an error.

*A Skeleton Outline of Old English Accidence*. By W. J. Sedgefield. 20 np. (Manchester: The University Press.) 1s. 3d.—This is a reprint from a larger work, in which selections from Bede are given. It is convenient to have an accidence that can be slipped into the pocket. But we wonder if the writer has consulted young students to find out what are exactly the difficulties met with in the first days. This should be done by all who aspire to write accidences. For ourselves, we should like the illustrative examples

translated, and another note on the identification of weak verbs that look as though they are strong would be useful. Another page would admit of the declension of demonstrative, adjective (weak and strong), and noun in the manner of the older grammars. Surely Varner on p. 12 is a mistake for Verner.

#### History.

*President Wilson*. By H. W. Harris. 278 pp. (Headley.) 5s. net.—This is a most useful and opportune study by an Englishman of the head of the great Republic which has just become an ally of this country in the painful but necessary task of purging the earth of the German pest. The book was written before America actually came in, but it clearly forecasts the issue and traces the trend of events that made President Wilson's action inevitable. Mr. Harris writes well, and his temper is eminently sober and judicious. His aim is neither to praise nor to blame, but to explain and make intelligible. He traces Mr. Wilson's career as scholar, teacher, and university principal, showing that the marked success which he achieved as an academic administrator clearly indicated his entry into a larger world of affairs. Mr. Harris's narrative becomes fuller when he reaches the period of Mr. Wilson's election as Governor of New Jersey. He well describes the great and successful war which he waged with corruption and sinister influences in the State, and makes it evident that his local triumph prepared the way for his elevation to the leadership of the Democratic Party as a whole. The chief enigma in Mr. Wilson's life is the problem how a man so vigorous and downright in domestic politics should have seemed so weak and hesitating in dealing with the atrocities of the Germans. Mr. Harris succeeds in convincing us that the apparent feebleness was deceptive, that the strong man was there all the time, and that he was merely holding back until the course of events had given him a united people to back him in decisive action. The dramatic developments of the last three months all confirm the truth of Mr. Harris's judgments.

*History's Background*. Book II., *The Discovery of the Americas, etc.* By J. S. Townsend and T. Franklin. viii+160 pp. (W. and A. K. Johnston.) 1s. 6d. net.—Messrs. Johnston have recently rendered valuable service to the cause of education by publishing several excellent text-books in which the studies of history and geography are combined. Notable among them is Mr. Kermack's "Historical Geography of Scotland." The volume before us is one of three in which the same method of combined presentation is applied to Great Britain and the British Empire. The first volume of the series treated of the growth of Western civilisation up to the end of the Middle Ages. The present book takes up the story at the point where the expansion of Europe took place. It describes the conditions in which the geographical discoveries of the sixteenth century were made, depicts the colonisation of America by the peoples of the Old World, and closes with an account of the movements within the growing Empire during the eighteenth and nineteenth centuries. Twenty well-drawn sketch maps aid in the elucidation of the text.

*Russian Realities and Problems: Six Lectures*. Edited by J. D. Dutt. viii+230 pp. (Cambridge University Press.) 5s. net.—The subject of the Cambridge summer meeting in 1916 was "Russia and Poland." Several of the lectures were delivered by eminent authorities who came from Russia expressly for the purpose of attending the meeting, among them being Dr. Harold Williams, the Englishman, master of forty languages, and for fifteen years resident in

the Slavonic lands. Six of these notable lectures have been selected for publication in the volume under review. Two are by M. Paul Milioukov, late Minister for Foreign Affairs in the Provisional Government. He writes first of Balkan problems, and he writes from intimate knowledge, for he was at one time a professor at the University of Sofia. Secondly, he deals with the history of the Duma, and here again he treats of his own experiences. M. Peter Struve discusses Russian economic questions; M. Roman Dmowski, in "Poland, Old and New," advocates Polish autonomy in close alliance with Russia; Dr. Harold Williams describes the nationalities of Russia. Finally, M. Lappo-Danilevsky, in an essay that fills one-third of the volume, portrays the development of science and learning in Russia. The whole volume is authoritative, and its publication is most timely.

*A Short History of Australia.* By Ernest Scott. xx+363 pp. (Oxford University Press.) 3s. 6d.—The writer of this work is professor of history in the University of Melbourne. He has rightly made it a leading part of his professorial duty to investigate the records of the great Dominion into whose service he has entered. In thirty chapters he traces the course of Australian history from the discovery of the continent—which apparently cannot be positively assigned to a date earlier than 1606—to the achievements of the Sydney and the Anzacs in the present war. The work is well done. Scholarly research is combined with a clear literary style. Particularly valuable to English readers will be the latter portion of the book, wherein are explained the movements that led to Australian Federation in 1901, and the subsequent developments of Dominion policy.

#### Geography.

*Australia.* By Prof. J. W. Gregory. 156 pp.; illustrations. (Cambridge University Press.) 1s. 3d. net.—Prof. J. W. Gregory has given us a useful little manual on Australia out of the store of his first-hand experience of the country. There are interesting chapters on the discovery, relief, flora and fauna of the continent, its products and its government. The reader is in his debt, since Prof. Gregory frequently suggests the limitations of the evidence upon which current information about certain aspects of the country rests; for example, with reference to "Wallace's line," he points out that the geological and biological evidence are in apparent conflict, and in regard to the view that the culture of the aborigines is simple and primitive, he suggests that the aborigines have lost arts practised by their ancestors, and become apparently primitive in response to their geographical environment. The book is replete with information, and we note but a few instances: the extent of pastoral settlement in Western Australia, the explanation of an excess of imports of timber over exports in a country with large forests, the great potential value of the coal deposits, and the success of the experiment in producing cane-sugar in Queensland with white labour. The book should be widely read by teachers and others as a corrective of the many mistaken notions regarding Australia which are prevalent in Britain.

*Physical Wall Atlas of the British Isles.* 7 maps. Scale, 187 miles to the inch. (Bacon.) Cloth, on rollers, 21s.; cloth, folded, in case, 26s.—This set of maps is conveniently folded and sent out in a handy case; the maps are eyeletted and strongly mounted. River basins and communications; contours with trunk railways and Roman roads; annual January and July isotherms; Dr. Mill's annual rainfall map with annual January and July isobars and insets showing a cyclone and an anticyclone; geology and co-tidal lines; natural

vegetation with industrial centres indicated by letter and density of population, are the facts indicated by these maps. Messrs. Bacon have not solved the problem of the representation of industrial facts upon a wall map—undoubtedly the most difficult problem of its kind; some of the symbols are confusing even at short range. Apart from this map the others should be extremely useful for class purposes; the rainfall, geological, and density of population maps are marked excellence.

#### Miscellaneous.

*A Diversity of Creatures.* By Rudyard Kipling. 442 pp. (Macmillan.) 6s.—The title of Mr. Kipling's last book is justified. Hunting, flood, drugs, delirium tremens, aeroplanes, Army ragging, and the war are the subjects round which the characters flit and jem. The war is new, but all the others we have had previously before us, *more Kiplingiano*, in other volumes. Those who admire will admire still, and those who carp will not be convinced. It is impossible to say anything new about the style or the contents of this volume; even when it is most technical there is no mistaking the meaning. The blunt reticence and blunter speech, the thick and vivid paint, the intense human interest, the omniscience, and, we may add, the elementary but quite good morals are all here; there are no dim figures on the canvases. There is one screaming farce and one tragic story. The farce, "The Village that Voted the Earth was Flat," is rather cruel; the tragedy, "Swept and Garnished," follows a classical instance in "Night and Day Stories." Perhaps Mr. Kipling breaks new ground in "Regulus," and shows, however much his dislike of "the Varsity" crops out, that he appreciates his Horace (though he misquotes him). Virgil, as in "The Explorer" he misquoted his Biblical. The verse, sprinkled lavishly through the book, rises to a very high mark in "The Children," and to a special melody in "The Song of Seven Cities." Praise of all these things is impertinent; they are all, nearly all, old; they are all new. For what matter to do the scene painting in deft splashes. And it is all good; unlike the faded books of our young writers this volume and this author know no cynicism and no despair. This is one, but only one, of the reasons why Mr. Kipling will be blessed by people who do not understand engines and machine-guns, or even Horace.

### EDUCATIONAL BOOKS PUBLISHED DURING APRIL, 1917.

(Compiled from information provided by the publishers.)

#### Modern Languages.

"French Plays for Children." By Josette E. Spinelli. 86 pp. (Harrap.) 1s. 3d. net.

"En France." By Prof. C. Fontaine. 224 pp. (Harrap.) 2s. net.

"Deutsche Anekdoten." By H. Staabe. (Harrap.) 9d. net.

"Notebook of Modern Languages." By J. H. L. Spiers. 144 pp. (Harrap.) 1s. 3d. net.

"Spanish Reader of South American History." Edited, with notes, exercises, and vocabulary, by Edward Watson Supple. xii+376 pp. (Macmillan.) 4s. 6d. net.

"Russian Self-Taught." Sixth edition, entirely reset in larger Russian and Roman type. Revised throughout by John Marshall. 136 pp. (Marlborough.) Cloth, 2s. 6d. net; wrapper, 2s. net.

"French and English Commercial Correspondence." By Dr. C. Laroche and W. Chevob-Maurice. Second

dition. 128 pp. (Marlborough.) Cloth, 1s. 6d.; paper, 1s.

"Rapid Method of Simplified French Conversation." By Valentine W. Hibberd. 192 pp. (Pitman.) 2s. net.

#### Classics.

"The Fragments of Sophocles." With additional notes from the Papers of Sir R. C. Jebb and Dr. F. G. Headlam. Edited by A. C. Pearson. In three volumes. Vol. i., c+270 pp. Vol. ii., vi+332 pp. Vol. iii., x+350 pp. (Cambridge University Press.) 45s. net. This work is the completion of Sir Richard Jebb's "Sophocles." Price for the set of ten volumes, consisting of seven volumes of the plays and three volumes of the fragments, £6 net, bound in cloth.)

"A Senior Latin Reader." Compiled by J. Lang. With eighty-two illustrations, maps, and plans. xii+350 pp. (Longmans.) 3s. 6d.

"Selected Letters of Cicero." By H. M. Popeat. 26 pp. (Harrap.) 2s. 6d. net.

#### English: Grammar, Composition, Literature.

"Lectures on Style and Composition." By E. Casson. x+218 pp. (Macmillan.) 3s. 6d.

"Lyton's Last Days of Pompeii." With introduction and notes by J. H. Castleman. xxii+482 pp. (Macmillan.) 1s. 3d. net.

"Shakespeare's King Richard III." Introduction and notes by Dr. A. R. Brubacher. xviii+204 pp. (Macmillan.) 1s. 3d. net.

"Pitman's English and Shorthand Dictionary." Definitions by Arthur Reynolds. 850 pp. (Pitman.) 1s.

#### History.

"The United States and the War." By Gilbert Vivian Seldes. 148 pp. (Allen and Unwin.) 2s. 6d. net.

"Russian Realities and Problems." Lectures delivered at the Cambridge Summer Meeting in August, 1916. Edited by J. D. Duff. viii+230 pp. (Cambridge University Press.) 5s. net.

"The American Indians North of Mexico." By F. H. Miner. xii+170 pp. (Cambridge University Press.) 3s. net.

"Story of the French Revolution." By Miss Alice Head. 240 pp. (Harrap.) 1s. 9d.

"Stories of the Scottish Border." By Mr. and Mrs. William Platt. 260 pp. (Harrap.) 1s. 9d.

"Four Lectures on the Handling of Historical Material." By Prof. L. F. Rushbrook Williams. 56 pp. (Longmans.) 3s. net.

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#### Two Points Connected with the Teaching of Reading.

In the issue of THE SCHOOL WORLD for May, among many articles of exceptional interest I may be pardoned for noting two matters which concern the teaching of reading. Mr. Bishop Harman's scientific treatment of word-blindness confirms certain opinions I formed in the course of experiments in an infant school in the South-East of London. He emphasises the ascertained fact that the *look and say* method is

the one truly scientific method of learning. My own experience is that for average children it is the *natural* way of learning. The average child wants to learn *cat*, *dog*, etc., as symbols of a cat, a dog. The process of classifying roughly our monstrous English spelling is a later process, and even then it is never quite completed. Most people find that they are at the mercy of some queer, unknown word they have never heard or seen before. I know an extremely well-educated woman of more than sixty who pronounces *gauge* as if it rhymed (why not *rimed*?) with *George*. But this raises an interesting point for those of us who believe in a phonetic, or simplified, spelling. Has anyone any proof whatever—scientific proof based on experiment—that children will treat words phonetically spelled by any method save *look and say*? My very strong belief is that in the early stages they will still treat the words as whole things, not composed from lesser units (four, that is, will be learnt as four, not two *plus* two), but when the analytical-synthetical stage begins the process will be simplified beyond all belief. For then they will know at once that two and two do indeed always make four, and not some lopsided fraction. The Simplified Spelling Society claims that the process of learning to read will be shortened by a year. That is a modest claim. Of course, we shall still have our stress difficulties, unless we use stress marks.

The other point is raised over the initials "A. B.," which one may, from internal and other evidence, be allowed to believe are those of one of our foremost, most sympathetic, and most delicate teachers of reading. "A. B." says:—"Another paper . . . is devoted to punctuation, and it is to be hoped that this matter will not be dropped. Every teacher of reading knows that punctuation has as little to do with really good reading as pronunciation has." While I confess that I suspect controversial matter in the last three words, I gather from what follows that "A. B." would rather like to see punctuation abolished, say all but the full-stop. Is it not conceivable that such a step would improve not only reading but also composition? If "A. B." is the "A. B." I believe him to be, he has had rich experience on which to draw for an answer. What of the stops and clear expression? Now, we rely on these props.

HARDRESS O'GRADY.

MR. O'GRADY is right in suspecting controversial matter. But in regard to punctuation I plead for a paucity of stops and an appeal to the reader's intelligence. At present the stops impose on us the *ipse dixit* of the compositor or of the power behind the compositor. We have no guarantee that the printed stops are those of the author. It would be an interesting exercise to print the opening lines of Milton's "Paradise Lost" (a) without stops (b) as Milton's publisher stopped them (c) as half a dozen good readers would stop them. The question is a large one, but I was thinking of the advanced reader who should never be a slave to punctuation.

A. B.

#### The Teaching of Appreciation.

THE attempt to arouse appreciation is essentially of our age. Educationists of earlier centuries were mainly concerned with the imparting of definite knowledge; but with the progress of educational theory has gradually come the realisation that knowledge in itself is neither culture nor a civilising force, and the doctrine of appreciation comes to the fore. In other words, we apportion value to the purpose of teaching rather than to the thing taught. Unless a subject is taught merely for vocational reasons, its main value in the curriculum is that it expresses some aspect of life that can be appreciated. In so far as any subject is learned or taught grudgingly, it is ultimately

useless in the best sense; and therefore, if appreciation fails to come, the teaching is comparatively worthless. There are, however, certain fundamental conditions which must be present before lessons in appreciation can be successful.

Appreciation essentially means the recognition and enjoyment of the good, or the true, or the beautiful in whatever is being studied, and in order to attain it the attitude towards the subject must be one of expectant interest. Any attitude towards any subject is engendered by all the circumstances attending the study, and appreciation cannot be kindled unless these are favourable. If the wood is damp or the mat feeble, the fire cannot be lighted; so if the pupil is uninterested or irritated, the right attitude is lacking. Most important is it that the pupil should be *at home*—that is, there should be none of the sense of antagonism so often existing between teacher and taught. To be at ease, the pupil must feel himself believed in and, to a certain extent, free; he must also believe in the superior wisdom of his teacher. This atmosphere is only present when the teacher possesses trust in the nature of youth, and credits him with the ability to appreciate. Expressed differently, this means that before appreciation can be taught, the pupils themselves must be appreciated, for without this preliminary attitude on the teacher's side a method will eventually prove psychologically false.

It is an unfortunate fact that many teachers, especially in the secondary type of school, are not in touch with their pupils' minds or lives. They know little of the parents, and less of the homes, their charges; and such ignorance is regrettable since the impersonal rôle so often adopted deliberately forms a barrier between school and life, whereas the two should merge far more completely. Games, social evenings, walks, are not what is meant; but a more human relationship, that, without any loss of dignity, brings the teacher more on a level with the pupil. Mutual liking should replace mere obedience and mere tolerance, so that those who do not enter the teaching profession because it does not offer sufficient "prospects" are best out of it, for the sake of the pupils.

Another point to be emphasised is that children should never be blamed for failure to appreciate—the fault in that case lies not in them, but in the methods adopted. And it is fatal to tell them they *ought* to like this or that, or they *ought* to think one thing or another. Many conscientious teachers, who are faithful in little things, but never allow their minds sufficient expansion to perceive the great things, ironically frustrate their own designs by attempting to push young minds and hearts into the groove of "*Ought*." It is far better to discover what children *do* like and to lead them on from that to higher types of truth, goodness, or beauty. The "*Ought*" is so apt to obscure realities and to create misunderstandings; and a young person resents being told he ought to think or feel something which he is far from thinking or feeling. And, in the teaching of appreciation, obscurities, misunderstandings, and resentments must be absent. The "*Ought*" of the teacher is one ingredient of what Mr. Holmes calls the "poison of dogmatism."

Examinations should have no place in the teaching of appreciation, which will only be attained in spite of them in the subjects that have to submit to tests. Results in the sphere of appreciation cannot be gauged by written tests; they are revealed in the subsequent point of view with regard to the subject and to life as a whole. Expression is always slower than feeling, and the attempt to force outwards a budding appreciation is sometimes sufficient to kill it.

It must be remembered that true appreciation should make a sense of proportional values; that is, all subjects should be connected with all others as part of the great story of civilisation, and the endeavour should be made to present to pupils the world and life as a whole rather than as so many disconnected details. A bird's-eye view is essential to comprehension of the landscape, and closer study will come later, in different directions for different pupils. In reality, all "subjects" are but part of the history of our race, and they can be fully understood and appreciated only when regarded as some part of man's thought, or action or expression. To insist upon education from the point of view of life relation would be to humanise all studies, and thus make them more interesting and therefore more valuable of being appreciated. E. M. WHITE.  
5 Park Crescent, Brighton.

### The Pose of the Pedagogue.

In an article entitled "Poetic Appreciation and Expression" that appeared in the April issue of THE SCHOOL WORLD, Miss E. M. White wrote many golden words of wisdom, and among them were these:—"A strong receptiveness on the part of pupils is present only when no trace exists of that semi-antagonism between teacher and taught that is far too prevalent. Aloofness is not an attitude that inspires confidence, or even real respect."

It is true, is it not, you teachers of literature? Mathematics may be imbibed effectively by children under the ministrations of an inhuman or superhuman pedagogue, the mysteries of geography may be revealed to the workings of whose heart remain a sealed book; I say they *may*, because I know nothing of these matters. But this I know, that the dormant poetic sense, the exquisite sensibility to poetry—language of the imagination and the passions—"can only be wooed into consciousness when one human heart speaks to another.

I have heard masters and mistresses standing high above their profession, in moments of self-confession and self-doubt, deny that such an attitude was possible between teacher and class. Mind, they will not as a rule say this in public. It would be contrary to the modern theory, and we most of us have a weakness for a theory complete and armed at all points, in spite of the fact that no such theory exists. But watch a teacher in undress, and I daresay he will tell you that between master and boy there may be such natural unreserve and sympathy, but not between master and class. Then pin him down to the reason. You will find it is not the impossibility of speaking one's heart to a collective audience. He will admit only that speakers of all kinds continually reveal their deepest enthusiasms to heterogeneous audiences. It is the fact that this particular heterogeneous audience is an audience of boys. "After all," he will say, "one is a master, you know."

And here I come to "The Pose of the Pedagogue." Senator Mackenzie once said that "priests, lawyers, and schoolmasters are alike in relying for their livelihood upon a capacity for depreciating human nature. They must eternally appear as half-inhuman." Must it be so? Can there never be intellectual honesty between teacher and taught? Of course, I admit that discipline is easier without it. But if we would be near to the hearts of our pupils, we must be prepared to find the maintenance of discipline a more tricky and skilful affair than it used to be in the days of the birch-rod, an affair demanding tact, generosity, good feeling, just as does the relation between manager or foreman and the wide-awake trade-union workmen under him to-day.

I wonder how many of us could say that we never get on the pedagogic pedestal in class? I would here distinguish between that reserve of judgment which is necessary when one's wider experience might bruise the wakening sensibilities and sentimentalisms of youth, and the conscious or unconscious hypocrisy to which I here refer. I have known teachers who will look righteously grieved and shocked over very harmless offences in the classroom, and who, at the staff-room door, shed suddenly and delightfully their moral weeds and stand revealed human, imperfect, entirely lovable. I have known others, too, to whom the pedagogic pose has become second nature. Their souls are withered and lifeless. And, to quote Miss White again: "What is alien from life is useless as an educational factor."

If only all teachers could realise the pregnant wisdom of this sentence! If only they could know that their pedagogic pose, so carefully and conscientiously upheld with the most praiseworthy of intentions, is nothing but a barrier placed in the way of all true education! Youth does not believe in these academic patterns of perfection. They seem to have no application outside school; they are remote from life, and therefore useless. And besides, youth will sometimes see through them, and therefrom may result a shock such as that which curdled the exquisite nature of Hamlet.

Once a class is conscious that the teacher is made of the same flesh and blood as themselves, and is ready to admit the fact, then a free exchange of thought becomes possible. Then, too, the words of the teacher become real, and are conceived as having an application to life in general; not as precepts which only hold in the classroom and are the fad of that remote, impeccable genus, the teacher.

A direct result of the usual conception of the teacher-mind is, of course, the strings of copybook maxims and "modern instances" which are handed in under the alias of essays. The real mind may be seething with ideas, but they never come to light because of the barriers between teacher and taught. The pupil knows that his ideas are not cast in a mould likely to receive the pedagogic approval, and may even be considered "cheek," and so he keeps them to himself. He cannot know that the teacher in his heart of hearts probably delights in any scraps of the unorthodox which come his way among the flood of facile insincerity, that a scrap, say, of spontaneous paganism, while it would be outwardly condemned, would probably be quoted with relish in the staff-room.

The great pity, of course, in this lack of sincerity, is that the teacher can never in any way touch the fundamentals of his pupils' moral nature, and that boys and girls can come out of school with as little breadth or fineness in their ethical code as when they went in.

As surely as the teacher hides his real self from the boys, so surely will they hide their real personality from him, and if you teach a boy, a man either, to hide his thought from you, you teach him to be your enemy. Intellectual dishonesty must be a temptation to the schoolmaster as to the priest. It results in the withdrawing out of sight and touch of one's humanity, one's essential and fallible self, from those who have so great need to see and to touch it. There is a crucial time when boys and girls begin to inquire and to balance, when fundamentals assume a startling importance, when poetry sings passionate songs, wonder-fraught of the great trinity—Love and Life and Death. Woe betide him who should unawares clip the wings of the fledgling soul or upset it from the nest so that it dies on the ground beneath. It is so fatally easy. Repression, indifference, carelessness, or lack of insight, intellectual duplicity—and the thing is done;

another English citizen without breadth or delicacy or elevation, without a love of beauty or an understanding of such love in others, another obstacle in the way of international happiness.

I have argued many times with members of the teaching profession that this double code of ethics and behaviour, if we grant it exists, is unnecessary unless one's natural ethics and behaviour will not bear exposure, in which case one is probably in the wrong line of business. I have never as yet found that, by a perfectly natural bearing, and by admitting the class into the whys and wherefores of my judgments, by, in fact, treating them as equals to whom I may not be rude or unreasonable any more than they to me, I have lost in any way power to keep their attention or their respect. But, of course, these things are difficult of proof to anyone except an eye-witness. And it is strange, but true, that no eye-witness can ever see teacher and class together entirely in their usual mood. The entry of an outsider at once alters the atmosphere. It is more strange that no one ever seems to want to see teacher and class together in their human relation. Inspectors and heads seem largely indifferent to this vital side of education. But here, perhaps, I may be unjust. Criticism of this kind would be spoken very privately, if at all.

In conclusion, I would like to appeal here to the heads of schools not to hamper their staff by insisting on a rigid and uniform discipline throughout the school. I have known two or three teachers with original ideas on such matters utterly suppressed and disheartened by an iron-bound system. There are many ways of conducting a class, some of which may possibly look unruly to the casual observer at the door, but which nevertheless may be of the utmost educational value. At least they might be given a trial if some enthusiast so desires.

Possibly the motto once given to writers might be adapted for teachers, and remain equally profound: "Look in your heart and teach." For looking in one's heart one will undoubtedly find honest humanity.

BRENDA MACGREGOR.

#### A Defect in Education.

In the January, 1917, issue of THE SCHOOL WORLD Mr. Fred Charles raises an important question, which every schoolmaster should make an honest attempt to answer.

It is certainly true in the majority of cases that before children go to school they ask no end of questions. They want to know the why and the wherefore of everything they see. They take in all reasonable explanations. I have come across many children who refuse to accept an unreasonable answer wantonly given by thoughtful parents to set children's minds a-thinking. In other words, children show abundant proof that their minds are growing, naturally and spontaneously, even as the waters of a mountain stream make their own natural courses. All that the intelligent parent or schoolmaster has to do is to direct children's energies along the proper channels, to provide them with such environments as will stimulate their activities and lead them to correct thought and understanding.

It is a matter, I believe, in the experience of every teacher that children in the infant school ask more questions in class than grown-up boys of, say, the Fifth or the Sixth Form. Many parents and more teachers, I am aware, do assume an attitude of terrorism towards young children in trivial matters, so that a feeling of fear is early created in the children's minds, and children gradually begin to shrink from asking questions. During seven years' experience as a teacher I have come across only one case in which

a parent—himself a teacher—taking real interest in his children has always attempted to give honest and reasonable answers to their questions. I certainly make bold to say that children's powers of observation are to a great extent handicapped by ignorant and stupid parents.

Teachers, though engaged in the "noblest of professions," are yet human beings, and until that millennium comes when the best men in society—best in reason not only of their learning, but also of their character and their capacity to impart to others the benefit of their knowledge—take to the "noblest of professions," in spite of the comparative poor prospects in life offered to the schoolmaster, it is not possible to expect every teacher to interest his pupils by talking a language "understanding of" them.

So far as South India is concerned, inspection certainly a farce. The control of the school is vested in one or more men, who pay a flying visit to the school once a year, and every teacher's work comes up for inspection for a few minutes before judgment is pronounced; and the strangest part of the scheme is that every teacher has to undergo this ordeal every year. It is therefore certainly true that teachers are compelled to give lessons rather than help the children to learn and work.

The educational system (so far as this part of India is concerned) is an anomaly. Too much time is given to the study of one foreign language, while too little is given to geography, Nature-study, elementary science, and such other subjects which stimulate children's powers of observation. To give a concrete example, I know of schools which devote thirteen out of thirty-five periods a week to English (foreign language in India), two periods a week to Nature-study, and three periods a week to geography. Not only are children unable to make observations in the short time allotted to them, but very often even the subjects offer, in the hands of an impatient teacher—predigested mental pabulum—to be ladled out to children with a liberal hand. And the rigid system of examinations, and the more rigid system of testing children's merits by the results of examinations—which most teachers are often necessarily out of touch—do not permit observation lessons a better treatment even at the hands of a capable and willing teacher.

So long as parents are ignorant and stupid and prevent the natural and spontaneous growth of the children's minds, so long as the system is not improved by liberating the teacher from the annual inspection and the mechanical preparation of the child for the examination, it is useless to expect better results.

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# The School World

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SIXPENCE.

## SECONDARY-SCHOOL TEACHERS' SALARIES.

FOR the first time in the history of English education a Government actually proposes to make grants with the definite object of improving the salaries of teachers. The new regulations for Secondary Schools make it perfectly clear that this is the sole, or at least paramount, object of the new grants. Local education authorities and governing bodies are delicately reminded that they have spent enough on their teachers in the past, and it is as delicately assumed that the only reason is that they have not had the money to spend. Now they are to have the money to spend, or, at any rate, some money; and it becomes important to consider how it ought to be spent. Some local authorities appear ready to have made up their minds that, whatever the Regulations may say, the right person to benefit by the new grants is the ratepayer, or that, at least, he has the first claim, and that, if there is anything over when he has been duly relieved, the case of the teacher may be considered. It is to be hoped that this state of mind will be dealt with faithfully and drastically; if it is not, the only thing for the Government to do is boldly to assume the responsibility for teachers' salaries and pensions, which could quite well be done without making teachers into Civil servants, when a good many people fear that it would have that effect, and their fears cannot be disregarded. We may, however, assume that the money provided by the new grants is going to get to the teachers, and that the main question is what sort of improvement or improvements it may be expected to secure. The easiest way to do this is to consider a case: and if the case selected is one in which the present conditions are comparatively tolerable, improvements that are necessary in such a case will be, *a fortiori*, necessary elsewhere. Let us take the London County Council's

scale of salaries, which is probably the best in the country, and let us take that scale at its highest, namely, the scale for men possessing full academic qualifications. These begin at £150, and the salary in ordinary cases rises by increments of £10 per annum to £300; in a number of cases, generally calculated at one for every hundred pupils, the maximum is £350. Thus in a secondary school of 400 boys there might be twenty masters (but not more, since the Council has adopted the proportion of one teacher to twenty pupils as its maximum); and if the headmaster has a secretary, that number will be reduced by one), of whom sixteen (supposing all to be on the Council's higher scale) would normally have started at £150 and would go to £300, while four might go to £350. In schools maintained by the Council these are the best conditions allowed. In some schools aided by the Council they may be better: a second master may get as much as £500 a year; it is possible to find more than one for every hundred boys going beyond £300, or some of those who go beyond £300 may go beyond £350. What is the matter with this scale or these scales? for obviously, if these conditions are inadequate, all conditions less favourable to teachers must be more inadequate; and everyone knows that, as a matter of fact, the average conditions up and down the country are decidedly less favourable in the case of men, while in the case of women, whose position in London is a great deal worse than that of men, they are really scandalous.

It may be said at once that there is nothing to quarrel with in the initial salary of £150; indeed, it might reasonably have been argued before the war that £150 was too high. Young people ought not to be bribed into the profession by high initial salaries; if the lack of reasonable prospects prevents the right kind of person from becoming a teacher, high initial salaries often attract the wrong kind. But though there is no reason why young

teachers should not be expected to live economically, even austere, there is every reason for very greatly improving their position when they have been proved and found competent. There are three weak points in the salary conditions of secondary-school teachers: (1) the normal maximum is too low; (2) the number of posts in each school carrying a higher maximum is too small (it need scarcely be said that the maximum in these cases ought to be raised at least in proportion to the others); and (3) every teacher ought to have at least a term off once in every seven years at full salary (if not, indeed, with a bonus in addition) for the purpose of refreshing his or her mind and engaging in some kind of research or experiment bearing upon professional competence. This grace term exists as an institution in some English schools; but they are very few. It is, of course, common in the United States, and is recognised wherever it has been adopted as an institution of the greatest value. It costs money: in a school of 400 boys it means approximately an addition of one to the teaching staff; but it is worth it, and it is one of the best purposes to which some part of the new grants could be put.

The grace term would be a positive gain; but an improvement in the position of the experienced teacher is the most obvious of necessary improvements. The great weakness of the teaching profession is the lack of a fair prospect in early middle life for the assistant master or mistress; and it is the absence of such a prospect which contributes more than anything else not only to keeping out of the profession just the type of man or woman that is wanted in it, but also to the subsidence of many teachers in middle age into a condition of mere acquiescence in the fact that they have blundered into a blind alley and must make the best of it. It is a singular thing that, while economists generally insist that high wages mean efficiency in production, it seldom occurs to anybody to apply this doctrine to the teaching profession, perhaps because so few are capable of understanding that the teacher produces anything worth troubling about. Yet anybody who has seen, for example, the effect produced upon the work of a staff by the adoption of an improved salary scale knows perfectly well what a difference it can make to the quality of that work. The service of education has to meet in its search for recruits the competition of other professions, of the Civil Service, and of business; and until it can offer the sort of prospect that a moderately successful doctor or lawyer or business man can look forward to, to say nothing of the Civil servant, who may do very well without being successful at

all, it will continue to find itself at a great growing disadvantage.

The enormous extension of the Civil Service with its appeal to parents who want their children in an assured position, already produced a formidable effect; and the tendency of business men to care more for educational qualifications of those whom they employ, and to make it worth while educated people to come into business another factor of increasing importance. Somehow or other, the public must be brought to realise that if education is to count for more in the general life of the nation it follows of necessity that those who do the educating must also count for more. To say you are prepared to put a premium on education in all sorts of professions and occupations but to leave the teacher where he was, is surely the most futile thing in the world: the natural effect is that the best pupils in our secondary schools go into professions and occupations where their education counts, and the teaching profession gets what it can from the rest—yet we expect the standard of education to be kept up.

It must be confessed that the Board's grants will not make a thorough reform possible. That was scarcely to be expected; at least they will make a considerable improvement possible—a school such as was referred to above might get £800 a year out of them apart from any grant for special courses—they ought to make local education authorities and governing bodies "think furiously."

The first thing to be done is to improve the position of existing teachers, whose hardships are too often overlooked. An increase of at least 10 per cent. on the salaries of all assistants in grant-earning schools is not at all an extravagant thing to expect; that or something like it ought to be put into operation at once, and any money that is over when this has been done should be devoted to a carefully thought-out plan for improving conditions along the lines already suggested: increase the maxima, increase in the number of specially paid posts, institution of the grace term. Nothing has been said about pensions because it is understood that the Government is preparing a Bill to give effect to the recommendations of the Departmental Committee which reported just before the war. These recommendations did not go nearly far enough, but they were on the right lines, and the co-operation of the local authorities can be counted upon. It must be confessed that local authorities preserve an ominous silence; indeed, the greatest necessity of all is the necessity for the conversion of local authorities to a belief in education.

## THE DEPARTMENTAL COMMITTEE ON SALARIES FOR TEACHERS IN ELEMENTARY SCHOOLS.

THE Government inquiry as to scales of salaries in elementary schools seems to be well conceived, and is the best attempt that has yet been made to investigate a difficult problem. It is, indeed, the first inquiry on the principles which should underlie any attempt to deal with scales of salaries. They are an unfortunate necessity, owing to parsimony and neediness of many educational authorities. They are, perhaps, more excusable now that so large a proportion of the education fund is to come from the National chequer. Unfortunately, they have been varied, even in districts of similar character. No effort has been made in most cases to make such a generous scale as would attract the right people into the profession, and in some districts the scale has been kept down to the lowest point at which teachers could be obtained at all. Hence it is high time that a scientific inquiry should be instituted into the principles which should underlie the formation of scales; and the constitution of the committee gives ground for confidence that such principles will be sought for. The committee includes members and officials of local education authorities, both town and country. It includes primary teachers, metropolitan as well as teachers outside London. The Teachers' Registration Council is represented, and we are glad to see that the head of a training college for women is included, so that the question of a starting salary is not likely to be overlooked. Naturally, also, there are representatives of the government upon the committee. We note with regret that no rural teacher is included, or apparently anyone working under a county authority. Although three of the five members are heads, there is not one who can claim to represent head-teachers as such, since they owe their position on the executive of the National Union of Teachers to their election by a mixed vote of heads and assistants. It would have been better to include one head-teacher of each sex from the National Association of Head-Teachers, and it is to be hoped that it is not yet too late for this to be done. This matter is especially important, as in recent discussions amongst primary teachers it has been assumed that the head-teachers' scale should bear such a relation to that of the assistant-teachers as to make the honorary position of the head-teacher very much above that of the assistant. This, we suggest, is a short-sighted policy, and not in the best interests of the calling. Whilst it is

allowed that to many assistants promotion to a headship is impossible, and that consequently the best scale of remuneration possible should be offered to the assistant-teacher, yet it is surely better for the profession as a whole that teaching should offer a career to its more fortunate members than that there should be a reduction to a dead level of mediocre positions.

It is much to be hoped that the committee will be able to produce a report which will recommend a sufficient minimum for all cases, and will be of sufficient elasticity and variety for adaptation to different parts of the country and to different classes of schools, and that it will be bold enough to suggest such a generous standard of remuneration as will attract ambitious and promising young people into teaching, enable teachers to look upon their calling as an honourable and well-regarded career, cause the general public to give the calling its due consideration, and teach the commercially minded that the so-called non-productive agencies are as essentially important to the community as are the industrial and distributive sections.

## THE SECONDARY - SCHOOL EXAMINATIONS COUNCIL.

EARLIER than was anticipated, the Board of Education finds itself in a position to proceed with the work of standardising our examinations. It is a matter for genuine satisfaction that the nation should not be spending all its millions on destruction, but should have started even now to set aside some for the good of the younger generation, which will have no easy task in setting our house in order again.

It is unnecessary to recapitulate all that has been said about the "ninety examinations"—a phrase that has become almost proverbial—or about the famous Circular 849 of the Board, which has been extensively discussed in these columns and elsewhere. The situation is one of extreme difficulty, and the Board of Education has shown commendable courage in facing it. The examining bodies have all, more or less, fallen into line and reconsidered their regulations with the view of conforming with the circular. The group system has been generally adopted, for better or for worse: a later generation of educational thinkers may maintain that it is the function of inspection, not of examination, to determine the curriculum of schools, and that the group system is not entirely satisfactory. The report on examinations prepared by a committee of the Education Reform Council may, one of these days, be accepted as suggesting a better solution than that to which we are now committed.

The Board of Education has recently issued Circular 996, which is reprinted below. The Board, as was foreshadowed in earlier circulars, becomes the co-ordinating authority for secondary-school examinations, and, as is not surprising, it assumes a very effective control. For advisory purposes it establishes a "Secondary-School Examinations Council," the constitution of which is made clear. The existing examining bodies supply nine members, and an equal number represent other authorities interested in the examinations. It is a rather large committee, and the duties entrusted to it are so extensive and important that assiduous attendance at somewhat frequent meetings will have to be the rule. "Travelling expenses, etc., etc." will become quite a respectable item, and the universities and other bodies will have to recompense their representatives for the time they have to devote to this work; it is scarcely to be assumed that payment of members is included in the Board's "etc."

Some of the matters mentioned in par. 9 of the circular, viz. those under (c), (d), and (e), can undoubtedly be undertaken by the council as appointed according to the Board's suggestion. When it comes to the maintenance of an adequate standard for a pass and for a pass with credit, and to the investigation of complaints made by school authorities with regard to examinations, we are on different ground.

There may be a sufficient proportion of the members of the council possessing "considerable experience of the working of examinations," yet no one may be expert enough to judge the standard in any particular subject, or to determine whether complaints as to the nature of a particular paper are well founded. Examining bodies with a desire to standardise their papers employ a body of experts whose function it is to ensure that the syllabuses submitted by the schools are suitable, and that the papers set are well expressed and in conformity with the approved syllabuses. The "moderating" of papers becomes especially important when schools are not all examined on the same papers, but a separate paper is set on the syllabus of each school in each subject, or papers in certain subjects are set for small groups of schools with identical, or almost identical, syllabuses. The moderators should naturally be well acquainted with the schools examined; their advice and criticism are then of special value to the examiners, who, as a rule, cannot have an intimate acquaintance with the schools for which they have to set papers. The best arrangement would no doubt be for the universities to combine examination with inspection—a combination regarded as desirable by the Board of Education—and for the inspectors to act as moderators.

Now the proposed "Secondary-School Examinations Council" is apparently entrusted with the function of "moderating" the papers at the various examinations which come within its purview; but there is no guarantee that members will possess the expert knowledge required for this very delicate and laborious work, nor is there any reference to the establishment of a body of super-moderators such as would seem to be required if the papers in each subject are to be adequately standardised.

We do not know whether the Board of Education quite realises how much work is entailed in moderating the papers even of a single examining body, when these papers are varied to suit the often very diverse requirements of different schools—and this will in future be the rule, not the exception. It requires men and women in the front rank of the educational world, who have not got into a groove, but are ready to encourage all judicious experiments who know what the schools are doing now and not merely what the schools were doing when they were teachers—or pupils; and who are able not only to criticise, commend, and improve the syllabuses of work, but also to save the examiners from the slips and the ambiguities of phrase to which even the best are liable while communicating their suggestions in a form which does not offend susceptibilities.

We believe we are right in saying that the Board of Education has not itself conducted examinations adapted to individual schools, and that consequently it has not needed experts of this type; it is therefore not surprising that it should have ignored the need for them in drawing up its Circular 996. We are, however, convinced that the proposed council will not be able to dispense with the assistance of such a body of experts as we have indicated. Even if there is no central body of super-moderators, there will at least have to be some machinery for utilising the services of those who have acquired experience in moderation for the various examining bodies represented on the council.

*Circular 996, May 25th, 1917.*

*Board of Education,*

*Whitehall, London, S.W.1.*

#### EXAMINATION OF SECONDARY SCHOOLS.

(1) In a circular (No. 933) issued to local education authorities and secondary schools in December, 1916, the Board recorded the stage then reached in the preparation of its plan for the improvement of secondary-school examinations. It further announced that it would not be possible to proceed at once with the plan as a whole. It is now, however, able to take up the matter again, and the following steps accordingly be taken to bring its scheme into operation on August 1st, 1917.

(2) From that date the Board will undertake

actions and responsibilities of a co-ordinating authority for secondary-school examinations with the instance of a body of persons to be called "The Secondary-School Examinations Council."

The main functions of this council, which are fully specified below, will be of a technical character requiring considerable experience of the practical working of examinations, and of the conditions which must be fulfilled if the certificates of approved examining bodies are to be generally accepted as evidence of the attainment of an adequate standard of general and advanced secondary education. For this reason it is desirable that the council should not be too closely discussion and prompt decision, and that the examining bodies should be represented on it.

The Board is, however, fully aware that there may be, important interests which should be consulted from time to time, even though it may not practicable to give to all of them a direct representation on the council. In the case of the organised associations the Board suggests that a standing committee should be formed which would nominate a member of the council, and would have still greater convenience and value as being available for consultation and conference with the council as occasion arose. The Board would welcome the formation of similar standing committees by other organisations which might be interested in the council's work—e.g. chamber of commerce.

The council will consist of eighteen persons, and in the first instance be constituted as follows:—

To be appointed by—

1.—The Oxford and Cambridge Schools Examination Board	...	...	1
The Oxford Delegacy for Local Examinations	...	...	1
The Cambridge Syndicate for Local Examinations	...	...	1
Bristol University	...	...	1
Durham University	...	...	1
London University	...	...	1
Northern Universities Joint Matriculation Board	...	...	3
—The County Councils Association	...	...	2
The Municipal Corporations Association	...	...	2
The Teachers' Registration Council	...	...	4
Standing Committee of Professional Bodies	...	...	1
			18

The President of the Board of Education will in the first instance appoint a chairman from outside the council.

Men and women will be alike eligible. One-third of the members will retire annually and will be eligible for reappointment. If any of the bodies named in Part i of the above list is not approved or fails to be approved as an examining body, its representation on the council shall cease.

The Board of Education will be represented at the council meetings by such of its officers as the nature of the work may require. These officers will attend as assessors, with the right to speak but not to vote.

Accommodation and secretarial and clerical assistance will be provided by the Board, and travelling expenses, etc., will be allowed to the members.

(6) It is intended that the council shall be established on August 1st, 1917, and that from that date all matters falling within the functions of the co-ordinating authority shall stand referred to it.

(7) The council will be entrusted by the Board with the responsibility for conducting on its behalf as co-ordinating authority all ordinary business, correspondence, and conferences connected with the co-ordination of examinations; but the council will consult the Board before committing itself on questions of principle or policy which are controversial or specially important. Officers of the Board who attend meetings of the council as assessors may request the council to refer any such question to the Board.

(8) The first duty of the council will be to consider the approval of examining bodies. In making its recommendations to the Board with regard to such applications the council will proceed on the general lines laid down in Circular 849, and summarised in para. 2 of Circular 933, as modified by pars. 8 and 9 of the latter circular.<sup>1</sup>

(9) The council will, subject to the provisions of para. 7 of this circular, deal with the following matters:—

(a) The maintenance by each approved examining body of an adequate standard both for a pass in the examination and for a pass with credit;

(b) Investigation of complaints made by school authorities with regard to examinations;

(c) Promotion of conferences with examining bodies and others as occasion arises;

(d) The form and contents of the certificates issued on the result of the examinations;

(e) Negotiations with universities and professional bodies for the acceptance of the examination certificates as exempting the holders from certain other examinations.

(10) The council will also be at liberty to submit to the co-ordinating authority from time to time suggestions for the improvement of the scheme of examinations, especially with the view of keeping the examinations in touch with the development of new studies and methods in the schools.

(11) The council will present annually to the co-ordinating authority a report of its proceedings in the exercise of the functions assigned to it, which will be published by the Board.

#### FINANCE.

(12) In order that the new system of examinations may not impose a new financial burden on school authorities, the Board proposes to pay to each school on the grant list taking an approved examination an additional grant not exceeding £2 on each pupil examined as a member of a form submitted to the first examination with the Board's approval, and on each pupil submitted to the second examination.

The Board reserves power to withhold or reduce the grant in certain cases, as, for instance, where a pupil is submitted to the first examination more than once, or is submitted to the second examination prematurely.

L. A. SELBY-BIGGE.

<sup>1</sup> A memorandum setting forth the outlines of the whole scheme will shortly be issued.

## THE POSITION OF THE CLASSICS IN EDUCATIONAL RECONSTRUCTION AFTER THE WAR.

By R. B. APPLETON, M.A.

Perse Grammar School, Cambridge.

'Ἐπεὶ δὲ πολέτου καὶ ἀρχοντος τὴν αὐτὴν ἀρετὴν εἴναι φιμεῖν καὶ τὸν ἀρίστου ἄνδρού, τὸν δὲ αὐτὸν ἀρχομένον τε δεῖ γίγνεσθαι πρότερον καὶ ἀρχοντα ὑστερον, τοῦτ' ἀν εἴη τῷ νομοθέτῃ πραγματευτέον, ὅπως ἄνδρες ἀγαθοὶ γίγνωσται, καὶ διὰ τίνων ἐπιτηδευμάτων, καὶ τί τὸ τέλος τῆς ἀριστης ζῶσι.—ARISTOTLE, "Politics," vii. 14.

**S**HORTLY after the outbreak of war a colleague of mine—now in France—with whom I often had long discussions upon our respective educational ideals, said to me: “Why, you talk as though this war were going to make no difference to the classics. Everything will be different at the end of this; not even your beloved classics will be the same.” What he meant was, of course, not that Homer, Sophocles, Plato, and Virgil would themselves be different, but that our attitude towards them would change. At the time I could not conceive how this could be so. It has been my lot to continue teaching the classics all this time, and I now begin to have some hope that my colleague’s words may come true, though in a sense different, I am sure, from what he meant by them. There is some hope that this war will have engendered in all of us such a horror of the forces of materialism that even the meanest instrument of idealism will be embraced, not only by schoolmasters but also by parents, with an enthusiasm little short of passionate devotion. And it is as no mean instrument of idealism that the classics will have a secure position in that educational reconstruction which must come so soon as we are freed from this war. In that reconstruction we must go down to fundamentals; we are, in some sense, our own law-givers, and, as Aristotle says, we must determine what is “the end” of the best life.

It is a platitude to say that education must fit a boy for life; but, like other platitudes, it is more often on our lips than in our hearts. We schoolmasters, however, must endeavour to keep ever vividly before our eyes a not unworthy ideal of the possibilities of human nature. It is our work to train man; and man can be very fine. Plato has given us an account of the human soul under three aspects: (1) ἐπιθυμία; (2) τὸ θυμοειδές; (3) τὸ λογιστικόν. This last—the rational part—is what distinguishes man from the beasts, and as educationists we are chiefly concerned with this. But we must not neglect the other “parts”; τὸ θυμοειδές—the “spirited” part, that sense of honour which is developed so well by the prominence allotted to games in our usual public-school education—Plato himself tells us is fostered by hard athletic exer-

cise. But what of ἐπιθυμία, that “mad-headed monster” which makes wreck of lives of so many men? It is the business τὸ λογιστικόν to control and unite its vagrant impulses, so that they may serve one dominant ideal in life. So Plato tells us, and education must help in this work. Left to ourselves, we are full of desire and passions for we know not what; but education must train us to find our joys and sorrows in the objects in which we share (χαίρειν τε καὶ λυπεῖσθαι οἷς δέ), so that what is fine and beautiful will be a joy to us, whatever base or ugly a sorrow. But for what proportion of the adults of this generation has education succeeded in doing this? How many “business men” are there in England to whom have amassed their fortunes, attained the highest civic dignities in their respective towns, or satisfied their “desires” in whatever other way has appealed to them, and yet feel dissatisfied? We schoolmasters bear our trust if we do not make it clear that ἐπιθυμία, as Plato has told us, is concerned chiefly with food and drink, or with the external good things of the world—τὰ ἀγαθά, Aristotle calls them—and that the human soul can find satisfaction in none of these. Man is unfortunately short-sighted; he wants wealth and success, and sends his son to school in order that he may there learn to “go on in life” and leave it as soon as possible. But while we have him we have the opportunity, brief as it may be, of teaching what Aristotle meant by τὸ εὖ ζῆν.

All this I wish to denote by the term “idealism,” and my main thesis in this article is that there is both a utilitarian and an idealistic side in the education of every boy, no matter how soon he leaves school or how long he remains there. Roughly speaking, there are two main classes of boys in the average secondary school—those who are going to the universities, and those who are likely to leave at about sixteen. For those who are going to the universities the idealistic and the utilitarian aspects of their work—whether they be studying classics, science, or mathematics—coalesce, and are, at bottom, identical; but for those who leave at sixteen they are different. Of these two classes, my own interests are chiefly with the first; but I will here to confine myself for the moment entirely to the second. For this class of boy science and mathematics, however “ideal” they may be for the boy who is going to a university, are purely utilitarian; English and classics are the only two subjects which can provide an idealistic element in his education. Of these two, English provides by far the greater scope; the teacher will be sadly at fault

wing at his disposal "the best that has been sought and said" in English, if not "in the world," he cannot mould the mind and character of his pupil to a pattern that is worthy the possibilities of human nature. And it is done, often with great success, by many teachers of English literature in our secondary schools. I have often thought such teachers particularly happy; unhampered by any difficulties of language, they can lead their pupils right to the inspiration of Shakespeare, of Milton, and of all the other poets and prose-writers who have made English literature tend only to the classics in the history of the world; whereas we classical schoolmasters are first to teach the language<sup>1</sup> in which the authors whom we wish our pupils to read express themselves.

Why, then, it may be asked, should we not leave it to English literature alone to provide the "idealism" which we want? The answer that classical literature is, in many ways, a better instrument for this purpose—explains why I am not myself a teacher of English literature and why I have not included modern languages among the two "idealistic" subjects mentioned. Neither French nor German literature can do anything for a boy which cannot be done by English literature; whereas Latin and Greek can. Let it be remembered that I am not speaking of the "classical specialist," but of the boy who leaves school at sixteen. Such a boy will have made a brief outline-study of Greek and of Roman history, and will have learnt thereby many things which he could not have found so clearly expressed anywhere else. From Roman history he will have received what are both the virtues and limitations of all that is denoted by that expressive word "gravitas," and from Greek history he will have gathered those fundamental political principles—of monarchy, oligarchy, tyranny, and democracy—without a clear understanding of which he can never become a useful citizen in his own country. His artistic interests, too—the most undeveloped aspect of the character of the modern Englishman—will, he has been at all fortunate in his teacher, have been unerringly stimulated and guided by some acquaintance with Greek art and architecture. But these are incidentals; he will read some actual Greek and Latin authors. Let us suppose that he reads, in Latin, the "Æneid," one book (or its equivalent) the "Odes" of Horace, one short speech of Cicero (say the "Pro Archia" or the "Pro

Rege Deiotaro"), together with a few oddments—easy, selected, and beautiful poems—of Catullus, Martial, and others; and, in Greek, apart from such things as easy Anacreontics, at least one book of Homer (say the ninth "Odyssey") and the "Apology" of Plato.<sup>2</sup> In this reading he will get something which I venture to say could not be obtained by any other means. To describe in words what this *something* is may be difficult; but no one who has read the second "Æneid" with appreciative boys will have any doubt about it. Style, perhaps, has a great deal to do with it; for it is just the difference between "I am seriously exercised about the advisability of committing suicide" and the spirit or tone of that monologue of Hamlet's of which these words are a paraphrase, but not an equivalent. The average boy will feel it in the apparition of Hector to Æneas in his dream:

O lux Dardanæ, spes o fidissima Teucrum,  
quæ tantæ tenuere moræ? quibus Hector ab oris  
exspectate venis?

or in the truly moving and tragic death of Priam:—

hæc finis Priami fatorum, hic exitus illum  
sorte tulit Troiam incensam et prolapsa videntem  
Pergama tot quondam populis terrisque superbum  
regnatorem Asiæ. iacet ingens litore truncus,  
avulsumque umeris caput et sine nomine corpus.

This *something* comes in to give a new significance and a reality to what would otherwise be a mere platitude and never enter the heart.

Pallida Mors æquo pulsat pede pauperum tabernas  
regumque turris

and

Quis desiderio sit pudor aut modus  
tam cari capit is

have something which is incommunicable by any translation, and the same is true of those many warnings which Horace gives us of the unsatisfying nature of wealth and of all τὰ ἔκτος ἀγαθά. And one may talk for months about the excellence of literature and the value of culture in life, and yet not create half the impression that will be made by reading this one sentence of Cicero's:—

At hæc studia [sc. literature] adolescentiam acuunt, scenectem oblectant, secundas res ornant, adversis perfugium ac solacium præbent, delectant domi, non impediunt foris, pernoctant nobiscum, peregrinantur, rusticantur.

<sup>1</sup> I wish rather to under-estimate than to over-estimate the amount of reading likely to be done, because I want to consider only such reading as will be appreciated as well as read. While learning the language the boy will read something which he will not really appreciate for its content. If he leaves school at sixteen, he is likely to have spent four years at Latin and two at Greek, and I leave out of account here what he will read during his first two years of studying Latin and his first year at Greek. The Latin reading mentioned, then, is done during his third and fourth years of studying that language, and the Greek reading during the second year of Greek.

<sup>2</sup> My conviction that this can be done most successfully by the "round" method, that by no other method can it be done so as to fit us now considering (who leaves school at sixteen) any question of classical literature. But this is a question with which I am concerned; let it only be understood that in the remarks which follow (Horace, Virgil, etc.) I am speaking of boys so trained.

Similarly with the Greek reading: οὐκ ἔστιν ἀνδρὶ ἀγαθῷ κακὸν οὐδὲν οὐτε ξῶντι οὐτε τελευτῆσαντι in its context in the "Apology" has a sincerity of moral fervour which will make a more direct and a more lasting appeal to a boy than a whole year's Sunday-school instruction; while the concluding words: ἀλλὰ γὰρ ἡδη ὥρᾳ ἀπίέναι, ἐμοὶ μὲν ἀποθανομένῳ, ἴμων δὲ βιωσομένοις ὄπότεροι δὲ ἡμῶν ἔρχονται ἐπὶ ἀμεινον πρᾶγμα, ἀδηλον παντὶ πλὴν εἰ τῷ θεῷ sound a depth of religious feeling which is not often reached even in the reading of adults. Wherefore I think that it will be an evil day for us when we neglect these things in the education of our youth.

#### RECENT PROGRESS IN SPELLING REFORM.

**A**NYONE who may be inclined to doubt whether the reform of English spelling, however desirable, is a matter of such pressing importance as to deserve public attention in these critical times of war would do well to read the pamphlet just issued by the Simplified Spelling Society with the not very dignified or apposite title, "Breaking the Spell," to which a wise and pithy introduction has been contributed by Dr. R. W. Macan. There he will find not only a persuasive restatement of the whole case for a radical change in our spelling, but a well-justified plea for prompt and vigorous action at the present juncture. Alike for the sake of economising time in education, of facilitating the extension of commercial relations, and of removing barriers to international intercourse, the proposed reform may fitly demand a place in post-war reconstruction. It will indeed be unfortunate if the new-born zeal for reconsidering outworn conventions, which is one of the compensations for the miseries and evils of the world-war, should be allowed to die down without securing long overdue reforms, such as a rational method of spelling and the introduction of a decimal coinage and the metric system of weights and measures.

Though there is still a good deal of indifference and prejudice to overcome in regard to spelling reform, it may almost be assumed that the movement has now reached a stage when it is more natural to discuss what the change ought to be than whether any change should be made. The attempt of the Simplified Spelling Society to set up a halfway house on the way to a scientifically phonetic system by devising a scheme that requires no new symbols, and even dispenses with the use of diacritics, is likely to meet with general approval. Like all provisional measures, the scheme has had to offer compromises that may

not commend themselves equally to all, but it must be recognised that after a certain point it is more important to reach an agreement than to strive after complete consistency. Promoters, however, are wise in admitting that some of their problems are still unsolved, in welcoming discussion so long as the question remains open. In response to that invitation the following suggestions are offered:

1. It would be very useful, alike on grounds of principle and practical convenience, if the letters of a digraph, such as *th* or *oe*, could be written and printed more closely together than the other letters of the word, so as to form virtually a single symbol. This device would make it possible to distinguish between the sounds of *er* in *her* and *heritage*, of *ir* in *irritate* and *irritate*, and of *ur* in *cur* and *curry*. It would also obviate the need for using a diaeresis in such words as *diet*, *poet*, *cruel*, to show that they are of two syllables.

2. The letter *y* should be used only as a consonant, the diphthong in *by*, as in *lie*, being represented by the digraph *ie*. There seems to be no good reason for making an exception in the case of the personal pronoun *I*. It is surely unnecessary to coin the digraph *eu* to represent a consonantal *y* followed by the vowel *oo*. The second personal pronoun would be more consistently written *yoo* than *eu*.

3. The vowel sounds in *full* and *fool* might with advantage be distinguished by using *oo* for the former and *ue* or *uu* for the latter. The form *tu* for *to* is not satisfactory, as *u* by itself should be reserved for its sound in *but*. *too* should be written *too*, while *too* and *two* would appear as *tue* or *tuu*.

4. If *didn't* and *wasn't* are to be spelt *didnt* and *wosnt*, then *little* should be written *litte* not *litel*. *Uncle* should be written *ungkl-* *unkel*, which suggests the pronunciation *un-* without the nasal sound. (*Anger*, *hungry*, should be written *angger*, *hungger*.)

5. *He* and *so* should be spelt *hee* and *soe* in order to conform to the rules laid down for the vowel sounds they contain.

6. One definite digraph, such as *er*, should be chosen to represent the sound heard alike in *her*, *fir*, *cur*, and *word*.

*French Plays for Children.* By J. E. Spink. viii pp. (Heath.) 1s. 3d. net.—These little plays "have all been tested in class, and successfully presented in morning assemblies by children of the elementary schools of the University of Chicago." They are unpretentious little scenes; three of them deal with Breton stories which justifies the inclusion of some pictures of Breton folk that do not otherwise serve to illustrate the plays. The longest play deals with Joan of Arc, but tells her story only so far as Chinon. On the whole these little plays are no better and no worse than a good many that have been published in this country during the last fifteen years.

### THE BOARD OF EDUCATION'S REPORT FOR 1915-16.

THE annual report of an important department of State inevitably consists to a large extent of bare facts and figures, the significance of which for any particular reader depends upon his knowledge and imagination. But such a report may also be in some degree a human document, and this is certainly true of the report of the Board of Education, just issued. A brief and interesting preface sums up the chief activities of the year, starting with the problem of reconstruction. A reference to the Government Committees on Science and Modern Languages, and to the interim report of the Consultative Committee on Scholarships for Higher Education, is followed by a declaration that improvements in higher education, important as they are, are not enough. The range of activities of the elementary schools is still too narrow, and the critical years of adolescence are largely left without supervision and training. "We do not ignore," continues the report, "the magnitude of the difficulties—social, administrative, financial—which any comprehensive scheme of educational development must encounter. Advance along the whole line of education cannot be made cheaply or rapidly. It demands not merely larger expenditure of money, but sacrifice of traditional prejudices and vested interests; it cannot but involve many changes and readjustments in our industrial and social organisation. Above all, in every grade of education the rate of advance must be conditioned by the supply of qualified teachers." This vital question of the supply of qualified teachers, and the menace to education which the present shortage of supply portends, is made the subject of a special section of the report, from which we quote the principal passages below.

A considerable number of elementary schools have been used as hospitals or for the accommodation of troops, about 123,000 children being thus displaced in the middle of last year. The Board notes with approval both the considerate attitude of the Army Council in this matter, and the patriotic action of the local authorities. Another interesting paragraph describes the war-saving movement in the elementary schools, and gives striking instances of its operation. Women have, of course, been largely employed as teachers of younger boys, though it has been found possible in most schools, we are glad to see, to keep men teachers in charge of boys above twelve. It is noteworthy that of the 19,000 ordinary elementary schools in England, only

about 38 per cent. are council schools, the rest being voluntary. On the other hand, of the 6,500,000 children in attendance, only about 52 per cent. are in the voluntary schools, the fact being, of course, that most of the large urban schools are council schools. We need scarcely say that no progress has been made in the provision of higher elementary schools during the war.

Coming now to the secondary schools, we find, as might have been expected, that the depletion of staff in boys' and in mixed schools, owing first to voluntary enlistment, and later to the operation of the Military Service Acts, has been a more serious matter for the secondary than for the elementary schools, because in the former the employment of women teachers beyond a certain point is inconsistent with efficient discipline, and, therefore, with efficient teaching. About 2,700 men teachers have left the English secondary schools for war service, the vast majority having, of course, joined the Forces. On the other hand, the number of pupils admitted, which suffered a setback in 1914-15, showed a remarkable increase in 1915-16, so that, in the two war-years 1914-16 taken together, the growth in the number of newly admitted pupils was nearly normal. It follows, then, that governing bodies and heads of schools must have had great difficulties to contend with, especially as there has been some depletion among mistresses also for hospital and kindred work.

Owing to the curtailment of statistical work, the Board is unable to give figures showing the attendance at technical, art, and evening schools and classes during 1915-16. In any case, however, it would scarcely have been worth while compiling such figures during so abnormal a period. The fact is sufficiently well known that all forms of "further education" between schools and universities have, like the universities themselves, been most seriously affected, and are simply awaiting the reawakening which must speedily follow the close of the war. Schools of art are suffering notoriously. In the technical schools and colleges a great deal has been done, and is being done, in the way of munition work and the training of munition workers.

On the whole, this report, though necessarily a record of stand-still in many departments of educational work, is a hopeful document, so clearly does it manifest a determination, so far as the powers and opportunities entrusted to the Board can avail, to speed up the machinery, especially in regard to the supply of teachers. On this all-important subject, so far as it affects the elementary schools,

we need make no apology for quoting the following extensive extracts:—

#### THE SUPPLY OF TEACHERS FOR ELEMENTARY SCHOOLS.

The Board has for some years past had to direct attention to the serious deficiency in the supply of teachers. Since last year the position has become still more critical. The table given below shows the number of candidates entering the first stages of the teaching profession in England and Wales in each of the past nine years beginning with 1908. It will be seen from the figures, and from the comments on them which are appended, how serious is the situation with which the country is now faced.

#### NUMBER OF INTENDING TEACHERS RECOGNISED FOR THE FIRST TIME IN ENGLAND AND WALES.

Year beginning August 1st	Boys	Girls	Total entrants
1908	2,722	6,892	9,614
1909	2,308	5,759	8,067
1910	1,558	4,627	6,185
1911	1,388	4,291	5,679
1912	1,167	4,065	5,232
1913	1,155	4,642	5,797
1914	1,251	5,117	6,368
1915	1,304	5,743	7,047
1916	1,063	5,228	6,291 <sup>1</sup>

The year 1908 is taken as the starting point in this table because it marks the transition from the system of pupil-teachership to the system of bursarship. It was the year after that in which the bursarship system first came into operation, while at the same time the old pupil-teachership system was still in existence in a large number of areas. The number of candidates admitted in the years immediately preceding this had been abnormally high owing to special circumstances; and the number recognised in 1908, which was 9,614, represents a return to something like the normal number of candidates admitted during the years previous to 1904. This number, if it had been maintained, would probably have produced a sufficient yearly supply of teachers to replace wastage, though it would not have allowed any large margin for the improvement of staffing. In fact, however, it was not maintained. From 1908 onwards the number of candidates admitted in each year sank rapidly, until in 1912 it amounted only to 5,232, showing a decrease of more than 4,000 in the intervening four years.

In view of this serious decline in the number of entrants we decided in 1912 to hold a careful investigation into the whole question. We obtained information and advice from our inspectors and from local education authorities as to the conditions prevailing in different areas. The conclusions at which we arrived were discussed at length in our report for 1912-13. Chap. v. of that report, which dealt with the supply of teachers for elementary schools, began by pointing out that the causes of the decline are complex; that they vary from district to district, and are different in town and country, and for men and women; and that it is difficult to disentangle them or to estimate their relative importance. It then proceeded to discuss the various causes to which the

decline might be attributed. Some of these, such as a belief in the existence of an over-supply of teachers, were purely temporary in their operation. Those of a more permanent character may be grouped under two heads, according as they relate to the ultimate prospects of the teaching profession or to difficulties experienced by candidates during the stage of preparation. The report recognised that the number of young persons adopting the profession of an elementary-school teacher must ultimately be determined by its attractiveness in respect of emoluments, immediate and prospective, status and security. Under this head reference was made to several factors which might be considered to have contributed to the decline in the number of entrants. Among these were the increase in the number and variety of other openings for boys and girls who might under former conditions have become teachers; the rise in the cost of living, affecting all persons in receipt of fixed salaries; a change for the worse in the prospects of promotion owing to the increase in the size of schools; and particular unfavourable conditions existing in various parts of the country.

It did not, however, appear that such causes alone could be held to account for the rapid falling off which had taken place in the years from 1908 to 1912, after a long period during which the average number of entrants had not varied very greatly. Much evidence was forthcoming to show that this falling off was largely due to the second set of causes mentioned above, namely, to difficulties experienced by candidates during the stage of preparation. Our inquiries led us to think that these difficulties were to some extent connected with the introduction of the bursarship system, which had coincided with the beginning of the decline in numbers. This conclusion did not in any way modify our conviction that the essential principles on which the bursar system was founded were sound. We are satisfied, as was stated in our report for 1912-13, that the requirement of a substantial period of continuous attendance at an efficient secondary school as a condition of the bursar grant has resulted in a marked improvement in the general education of intending teachers, and that abandonment of it would be inimical in the long run to the efficiency of elementary education. We saw, however, some reason to think that the new system on its introduction was attended by incidental difficulties which had prevented many candidates, who might in earlier years have become pupil-teachers, from availing themselves of its advantages. The difficulty most widely experienced was that the maintenance grants offered by local education authorities to intending teachers while at the secondary schools were usually smaller in amount than the salaries which had been offered to pupil-teachers, while the expenses of the education of the candidates were increased. For this reason many parents, whose boys or girls might formerly have become pupil-teachers, were unable or unwilling to let them prepare for the teaching profession under the new conditions. A second difficulty, experienced in rural areas, was that the adoption of the ideal of a secondary-school education for teachers and the general abandonment of the pupil-teacher system resulted in

<sup>1</sup> In addition there are 135 applications which are still under consideration.

excluding from the teaching profession many promising candidates whose homes were out of reach of a secondary school.

In the Regulations for the Preliminary Education of Elementary-School Teachers for 1913 various changes were introduced, which were intended to meet difficulties of the kind mentioned in the last paragraph. It was not, of course, anticipated that these changes could go to the root of the problem. We realised that other considerations, particularly that of the salaries paid to adult teachers, must in the long run be determining factors. These factors, however, as was pointed out in our report, raised large questions of educational and financial policy which could not be solved immediately. We set ourselves, therefore, to deal with less fundamental difficulties which could be met by minor changes in our Regulations. We proceeded on the assumption that a number of children, who were well qualified to become teachers, and who would have been willing to become pupil-teachers in former days, were now prevented from entering the teaching profession by some of the indirect results of the bursar system, and we hoped to remedy this state of things by encouraging local education authorities to facilitate the entry to the profession of children who were thus prevented from reaching it. The remedies introduced for this purpose in 1913 may be summarised as follows :—

(1) Some further assistance by the State to meet the expenses incidental to preliminary education in cases where the bursar system was applicable.

(2) The development of rural pupil-teachership on improved lines.

(3) An increase of flexibility in the Regulations, with the view in particular of facilitating the transfer to secondary schools of candidates whose decision to prepare for the teaching profession was taken too late to enable them to become bursars.

(4) The encouragement and assistance of schemes other than the bursar and pupil-teacher systems for admitting candidates into the teaching profession.

The experience of the next few years bore out the expectation that, under the conditions then existing, the supply of teachers could be increased by removing difficulties at the preparatory stage. The number of candidates recognised in each year as bursars, pupil-teachers, or student-teachers began to rise as steadily as it had fallen in the preceding years. In 1912 the figure had reached its lowest, and stood at 5,232. In each of the two following years it increased by several hundred, rising in 1913 about to the point at which it had stood in 1911, and in 1914 about to the point at which it had stood in 1910. It was evident that the decline had been arrested, and there seemed reason to hope that the increase might continue as the new facilities afforded by the Regulations became better known, and as local education authorities came more and more to realise their responsibility in connection with the training of teachers. There were other encouraging signs besides the increase in the number of candidates entering the teaching profession at the stage to which these figures relate. There was an increase in the number of candidates for admission to training colleges who had not been either pupil-

teachers or bursars. There was also a marked decrease in the wastage of pupil-teachers and bursars, due no doubt to improved teaching in the secondary schools and pupil-teacher centres. The figures available in 1909 had led the Board to estimate this wastage at not less than 25 per cent., but later information has shown a steady diminution in the rate of wastage at this stage, which, according to the most recent figures, is now about 16 per cent. Taking all these factors into account, the position immediately before the war was decidedly more hopeful than it had been in 1912. Even after the first year of the war the number of candidates entering the profession continued to rise, and the number of recognitions for the year 1915-16 amounted to 7,047.

The improvement, however, was still far from being sufficiently great to remove anxiety for the future. In our report for each year since 1913 we have felt it necessary to direct attention to the gravity of the situation, and in June, 1915, we issued to local education authorities in England a circular urging upon them the need for further effort. In that circular we expressed our belief that the total number of intending teachers annually recognised was still quite insufficient to keep up the present number of teachers in the country as a whole. The circular was issued before information as to the entries for 1915 was available, but there can be little doubt that this statement would hold good, even of the increased figures reached for that year. It is difficult to reach exact conclusions on this matter, as the question of the rate of "wastage" for adult teachers is an extremely complicated one. We pointed out in the circular referred to that the rate varies very much in different districts, and that we did not regard it as possible to lay down any proportion of intending teachers to posts which would be a safe guide to a particular authority in estimating its annual needs. We added, however, that in our opinion there could be few areas the needs of which could be satisfied with a proportion of less than 6 per cent. per annum, even though no allowance be made for the growth of population or improvement in staffing. If this percentage, which is based on calculations made by a number of different authorities, is adopted as a basis for the country as a whole, it would follow that something like 9,000 entrants to the profession ought to be recognised annually in England and Wales to replace the ordinary wastage in the number of posts for qualified teachers on the staffs of public elementary schools, which was in January, 1915, about 150,000. . . .

The critical nature of the position was made still more serious by the outbreak of the war, and by the steadily increasing demands on men teachers and men students in training colleges for military service. As the process of depletion of men teachers and students continued, it became more and more clear that unless the yearly number of entrants showed a further steady increase a most dangerous shortage must be looked for in the near future. Unfortunately, the figures for the number of candidates entering the profession in 1916 make it clear that no such increase is to be hoped for.

It seems evident that the tendency to an increase in

the number of entrants to the teaching profession, which was set on foot by the changes in the Regulations of 1913, is now being counteracted by stronger tendencies in the opposite direction. If we take into account such factors as the withdrawal of men teachers and students for military service, the demand for labour in all fields of national life, the high wages now earned in many callings, and the rise in the cost of living, there is every reason to fear that the causes tending to divert candidates from the teaching profession to other callings must continue to gain in force. Some of them no doubt will cease to operate with the end of the war, but, so far as can at present be foreseen, most of them are likely to persist after it. The conditions which enabled a partial recovery to be effected during the years from 1912 to 1915 can no longer be expected to hold good, and it cannot be hoped that any minor changes in the Board's Regulations as to the education and training of teachers will now be sufficient to meet the difficulty.

*We feel it our duty to record our conviction that a continuance of the present shortage of supply would not only preclude such improvements as an increase in the length of school life or a reduction in the size of classes, but would gravely imperil the maintenance of the level of efficiency in elementary education which was reached before the war, and that we see no hope of meeting this shortage except by a substantial increase in the salaries of adult teachers and by a general improvement in the prospects of the teaching profession.*

The italics are ours, and our readers will, we are sure, agree that we are justified in giving the passage this special mark of importance. The issue is indeed a grave one.

#### REFORM IN SCOTTISH EDUCATION.<sup>1</sup>

THE report which has just been issued by the Scottish Education Reform Committee is one of the most comprehensive statements of educational policy which have yet appeared. It extends to 160 pages, and is provided with an admirable Table of Contents and a Summary of Recommendations. In scope, in matter, and in form it is altogether worthy of the Reform Committee, which is representative of the three great professional organisations of teachers in Scotland, the Educational Institute, the Secondary Education Association, and the Class Teachers' Federation.

The report may be regarded as the first-fruits of the new spirit of professional solidarity which animates teachers north of the Tweed, and as an earnest of still more valuable fruits in the years to come. The committee has surveyed practically the whole field of Scottish education by means of six sub-committees, dealing respectively with administration and finance, general education,

the education of women, technical and university education, professional training and status, and moral education. The committee seeks to justify the issue of the report on the ground that it is the clear duty of those who are actually engaged in the work of education to place their skilled and considered opinion at the disposal of the country. No formal justification, happily, is needed. The report carries on every page its own justification by the liberal, far-sighted, and thoroughly practical nature of its suggestions. While much of the report is necessarily technical, a large part of it should appeal to all who have a serious interest in the cause of national education, whether in England or Scotland.

It is interesting to note that, while the influence of the Scottish education system is written all over the scheme of educational reform recently outlined by Mr. Fisher for England, the Scottish Reform Committee has not hesitated to go to England for suggestions for improvement in its national system. Hitherto Scottish teachers, administrators and legislators have held firmly by the *ad hoc* principle; but the Reform Committee, influenced both by the logic of facts and by the successful example of England, has pronounced boldly for the county council system of administration. In doing so it had full regard to its many defects, but these it held to be more than balanced by its great possibilities and by the fact that it emphasises the essential oneness of the educational process. Education can no longer be regarded as a matter of mere schooling. It is indissolubly bound up with the whole social life of the community, especially with questions of housing, medical inspection and treatment, means of recreation, and the like. The school has too long been regarded as an independent, isolated unit, and education as a thing apart from the main stream of life. The *ad hoc* principle supports and emphasises this idea of isolation. On the other hand, the county council system brings back the school and education into the communal current, and the Reform Committee is to be congratulated on its courage and initiative in suggesting this change.

The report is in line with nearly all other schemes of reform on questions such as the raising of the school age, the provision of compulsory day continuation classes, the extension of medical service and treatment, the reduction of the size of classes, and the provision of more liberal bursary schemes. Nothing, indeed, is more remarkable in all the schemes of reform that have been issued than their general similarity. They all seem to have a common parentage, and such dif-

<sup>1</sup> "Reform in Scottish Education." Being the Report of the Scottish Education Reform Committee. (34 North Bridge, Edinburgh.) 1s. net.

ences as are sometimes met with serve only to heighten the general resemblance. One could fain believe that this is due to the unanimity of the wise," but there is a fashion in reforms as in everything else, and it is to be feared that part of the agreement is merely a homage to the mode of the hour. There can be no suspicion of such insincerity in regard to the Reform Committee's proposals. They breathe the passionate conviction of men who have had an intimate and sometimes better knowledge of the things they speak of. In regard to examinations, the committee concedes its authority to the view which was recently so ably expounded in these columns by Mr. Bentcliffe, the ex-president of the National Union of Teachers, that the only examinations which should be tolerated in primary school are those which form an integral part of the education of the child. In secondary schools the committee accepts a "hateful" necessity some form of external examinations. It frankly recognises the great work that has been accomplished for Scottish education by the leaving certificate examinations during the past twenty years. They have helped to give definiteness to the work of the teacher and thoroughness to the work of the pupils. But the committee is strongly of the opinion that some changes are now necessary. It advocates the transference of the control of the examinations from the Education Department to an examining body representative of the department, the universities, and the teaching profession, on the analogy of the Joint Examination Board of the Northern Universities.

The section of the report dealing with the education of women is marked by sanity and restraint. It rightly emphasises the fact that the character of the instruction and the conditions of work and play in schools have been determined by the needs of boys rather than those of girls. This has naturally led to one-sided development, and too little stress has been laid on ideals of conduct directly connected with women's function in life and in activities which centre in the home. The chapter on technical and university education contains a valuable historical prospect and an analysis of the causes of the decline to British industrial supremacy which marked the period immediately before the war. There is also a valuable section on the present unsatisfactory position of higher commercial education. Here Scotland lags behind all its commercial rivals, as there is not even the semblance of higher commercial education in any centre in the country. The report on professional training and thus presents an unanswerable case for im-

proved conditions of service. The figures given in regard to the supply of teachers reveal a serious decline in the number of male students entering the profession, and unless steps are immediately taken to secure improved salaries and prospects, the male teacher will soon disappear from the elementary school.

The subject of moral education, which rounds off the report, deals with a difficult and delicate subject in masterly fashion. Throughout it is assumed that religious instruction is bound to have moral issues, and that moral instruction depends upon religious sanctions or upon sanctions which may ultimately be regarded as religious.

The following extracts touch but a small part of the ground covered, but should lead readers to seek a fuller acquaintance with the complete report :—

#### COMPULSORY AGE.

*Attendance at Day Schools should be Compulsory from Five to Fifteen Years of Age.*

The present system whereby compulsory education ceases at fourteen years of age is wasteful intellectually and mischievous morally. The reports of the Inter-Departmental Committee on Physical Deterioration, and of the Poor Laws Commission, have made this abundantly clear, and there is general agreement that drastic and far-reaching changes are needed in order to cope with the grave social evils that have been shown to be due to the failure to make adequate provision for the training and supervision of young people up to the age when they can reasonably be expected to take care of themselves.

The raising of the school age would only partially meet the case, but a further year of school training and discipline would be of priceless value in equipping the youth of the nation to meet the increasing demands of industrial life on the intelligence, adaptability, and capacity of the workers, and to face successfully the growing dangers and temptations of modern life.

The extra year's instruction would come to them at an age when the intelligence and reasoning powers were becoming more fully awake, and when the ends and aims of education were more fully recognised and appreciated, while they would be kept under discipline just at the time when it was easiest to influence permanently the formation of character. This extra year would also serve to bridge the present fatal gap between the age of leaving school and the age for entering upon a definite career. The census tables show that, for at least the first year after leaving school, a large percentage of young people have not settled down to a fixed employment. They shift from occupation to occupation out of a desire for change and variety or to mark time until they are old enough to enter the skilled trades. From fourteen to fifteen is an industrial loose-end, and has a disastrous influence upon the character of many youths. They are apt to become slack, indifferent, lazy, restless, and much of

the value of their school training, mentally and morally, is lost.

The proposed extension of the school age would undoubtedly place a serious burden upon many parents, and substantial State assistance in the form of a liberal bursary scheme would have to be provided. This, however, could in large measure be secured by a redistribution of the present funds available for this purpose. It must not be overlooked that there is a keen and growing desire among a large section of the working classes for increased educational opportunities for their children, and in Scotland at least they may be trusted, as in the past, to make sacrifices to secure these for them.

#### CURRICULUM.

##### *Primary School.*

"In framing the curriculum we should show a wise neglect of all unnecessary things." This dictum of Mulcaster should be kept steadily in view by all who have responsibility for the framing of curricula. Education authorities, in response to the demands of this or that section of public opinion, have introduced subject after subject into the school curriculum. When any new disease is discovered in the body politic, a remedial course therein at school is the specific usually recommended. Regard is not had to the necessary and indispensable, but to the expedient and desirable. The "enrichment" of the curriculum that has thus taken place has not been accompanied by any lessening of the demands in the staple subjects. Hence, again, over-pressure and cramming instead of educating.

**THE INSPIRATION OF FRESH BEGINNINGS IN EDUCATION.**—What subjects could be dispensed with? Nature knowledge, history, and geography are all excellent subjects in themselves, but they are not absolutely essential in the early stages. The formal study of these subjects might well be delayed until the pupils reach the senior division, when they would be taken up with zest and interest. Pupils in primary schools seldom experience the charm of fresh beginnings. Practically every subject is begun in the infant room and continued throughout the whole course. The formal study of grammar should be begun only in the final year of the primary course, and should be restricted to a knowledge of the elementary principles of analysis and of the functions of words in the sentence. The co-ordination of grammatical terms suggested by the Committee on Grammatical Reform should be adopted in all schools.

**GET RID OF THE "LUMBER."**—In the retained subjects there should be a careful revision of the subject-matter in order to ascertain the minimum essentials in each, and to reject all that is merely archaic, traditional, and non-essential. Every subject in the course of time gathers up a lot of "lumber" that is accepted as of the essence of the subject, and is taught without reflection generation after generation. In the United States a committee has been at work for the past two years carefully revising the syllabus in each subject, and suggesting what can without educational loss be rejected or reduced. There is much need for a similar inquiry in this country, and it is one which

should be taken up as one of the first tasks of united Associations of Teachers.

##### *Intermediate School.*

If education were made compulsory up to eighteen years of age the need for direct vocational training between twelve and fifteen would be greatly lessened. As a matter of fact, education can never be vocational until the vocation is definitely assured; and this it seldom is at school. But while school education cannot and should not be vocational in the narrow sense of the term, it is both possible and desirable at this stage to differentiate curricula to suit varying capacities and probable future needs of different classes of pupils. There are at present operation two types of education for pupils between twelve and fifteen years of age—the intermediate and the supplementary. These two answer in a general way to differences in capacity and in the future needs of pupils. There is the literary or professional type for the intermediate pupil, and the practical or industrial type for the supplementary pupil. The success of these two types of school proves that they have met public needs. The intermediate or professional type of education after long travail built up for itself a high reputation. Its certificates have been accepted by almost every examining body as exempting from its own examinations, and are recognised as a passport into most of the professions.

The supplementary or practical classes have suffered from the differential treatment meted out to them by the department as regards grants, size of classes, and staffing requirements. This has occasioned a considerable social and educational stigma to be attached to them; but this notwithstanding, they have been gradually rising in public estimation, and there can be no question that from their emphasis on practical work they meet the needs of the great majority of pupils better than the professional schools.

##### INSPECTION.

The present system of inspection has few friends among teachers. To many it is the most irksome and harassing of all their conditions of service, and they would gladly see it abolished altogether. For many reasons inspection is necessary and inevitable in a State system of education. The central authority must have agents in order to obtain the data necessary for carrying on its work, and in order to see that the standards agreed upon by general professional opinion are met as near as may be in each case. No individual teacher is entitled to say that he is to be the sole judge of the virtue of his own methods and the value of his own results. All public servants are better for enlightened supervision, and the teaching profession should have for its aim, not the abolition of inspection, but the reform of inspection.

The first thing to secure is that those responsible for inspection should have the right point of view. They should regard themselves as members of the teaching profession, and not as an official caste, owing allegiance, not to education, but to a Government department. This is the capital fault in the present system. The inspec-

of a free man. He has to take the educational system as he finds it. No matter how vicious, how bad, how deadening that system may be, official decree prescribes that he must remain silent and say nothing.

Scottish inspectors have been, and are, as a rule, of high ability, strong character, and clear insight; yet because of the system under which they work they have left no corresponding mark on the education of the country. All this would be changed were not merely allowed, but encouraged, to change the system they are helping to administer.

The system of inspection to be useful must be constructive. The present system, notwithstanding the good will of the inspectors, is mainly destructive. Again the point of view must be changed. The inspector must recognise that his main business is to help, to encourage, and not to criticise or censure. If he comes across bad methods of teaching in the school he should be prepared to take off his coat and show how they can be improved.

It cannot be too strongly emphasised that a body of highly intelligent men, of long and successful experience and sound scholarship, moving about the country with observant eyes and gathering and publishing the results of their inspection of schools, will be of the very highest advantage in the progress of education. While the part of their work which is concerned with the maintenance of the efficiency of schools, and the seeing that the regulations of the government are reasonably met, is of considerable importance, the part that might be developed by communication from school to school information of the success or failure of different methods, in advising in cases of difficulty, in suggesting, initiating, and supervising experiments in curricula and methods, cannot be highly estimated.

#### RURAL EDUCATION.

The improvement of education and of educational facilities and conditions in rural districts is probably the most clamant of all educational problems at this time and is of vital importance. This is due not only to the number of individuals affected—although it must be remembered that agriculture is still the largest single industry in the country—but to the size and potency of their lives on the vigour, health, and character of the whole nation. No apology therefore is required for devoting to it a separate article even if so doing necessitates some repetition of what has been said already.

**URBAN CONDITIONS ALONE CONSIDERED.**—Since the passing of the Education Act of 1872, the city school system may be said to have filled the educational stage. The great increase in the urban population for two decades after the passing of the Act, and the magnitude and complexity of the educational problems thus raised, inevitably made the question the centre of interest. But these conditions no longer hold. The urban problems, if not solved, are at least on the way to solution, and the provision of school places, save in one or two centres, may be regarded as fairly complete.

**SELECT OF RURAL EDUCATION.**—All this time the

rural problem has been disregarded. It is true that isolated attempts have been made to ease the financial situation in rural areas by money doles, but no attempt has been made to deal with the question as a whole, or to make adequate provision for the special needs of this section of the population. The first step towards reform is to recognise the existence of a rural problem quite distinct from that of the town, a problem requiring special treatment as regards curriculum, organisation, and administration generally.

**RURAL DEPOPULATION.**—The question of rural education is an essential factor in the problem of rural depopulation. It is not necessary here to enter at any length into the causes of the migration from country to town. Some have their origin in the natural desire for a brighter, fuller life and a wider outlook than the country appears to afford; but perhaps the most compelling and assuredly the most worthy motive is the desire of parents to give their children a better education than is at present possible in country districts. The claim by the Education Department that the present educational system affords equality of opportunity to all children, rural and urban, can scarcely be accepted as in accordance with facts.

#### INFLUENCE OF WOMEN TEACHERS UPON GIRLS.

The Reform Committee considers it desirable that in the interest of girls attending all grades of schools (primary, intermediate, secondary, junior student centres) provision should be made for special supervision and control by a woman teacher with definite status and good salary. Where the head of the school is a man, such a woman teacher would as senior mistress or lady superintendent take special oversight of such matters as the girls' health, conduct, recreation, manners, and relations with the boys. In all types of school such special duties should involve the curtailing of the hours of teaching required of the mistress in question. In intermediate and secondary schools, where the work of supervision is many-sided, a considerable reduction of the teaching periods would be necessary. Women appointed to such posts should have a good scholarship record as well as sympathy, sound judgment, and experience. They should, if possible, share in the organisation of the school, and be responsible for the most advanced teaching in some subject. Opportunities of consulting such mistresses regarding matters within their province should be given to the parents of the girls and to members of the school staff. In schools of the intermediate and secondary type several women teachers with restricted teaching time-tables should be chosen to co-operate with the senior mistress as regards the points named above, and to promote school societies and activities (e.g. school charities) likely to develop right views of citizenship and social responsibility.

#### PARAMOUNT IMPORTANCE OF RESEARCH.

**SCIENTIFIC AND INDUSTRIAL RESEARCH.**—The greatest need of British industry is undoubtedly research, and it is impossible to emphasise this matter too strongly. In great scientific discoveries this country probably leads the world, but it is in the lack of that patient course of investigation which is necessary to render the scientific discovery a commercial asset that our most con-

spicuous failure occurs. Mr. J. Ellis Barker very forcibly indicates the weakness of our present industrial condition when he remarks:—"The hosts of mediocre German chemists have established the most flourishing industry in the world by making use of the great chemical geniuses of England and France, who, lacking an adequate rank and file, were unable to utilise their inventions in their own country." It is precisely because Germany is continuously turning out a huge "rank and file" of highly trained mediocrities, capable of carrying out laborious and painstaking industrial research, that she has been able to make science the handmaid of industry to an extent realised by very few people in this country. As a nation striving to maintain our trade and commercial supremacy, our total neglect to supply such a "rank and file" has been a colossal blunder. In this connection it is an illuminating fact that, in proportion to population, Germany has two hundred and fifty trained chemists for every one we have in Great Britain.

#### HIGHER COMMERCIAL EDUCATION.

No part of our present endeavours to provide suitable vocational training for the more important forms of employment among our adolescent population is so defective as that which deals with the preparation of pupils for a commercial career. In its lower stages, as in the continuation classes, our present system of commercial education is much too narrow in its conception and objective, and in its higher forms it can scarcely be said to have developed at all outside private institutions where the methods employed are seldom educational. This singular lack of initiative and enterprise, with its disastrous results, is due in very great measure to the profound distrust with which the great majority of business men in this country have, in the past, regarded all attempts at systematic commercial education. This, in turn, is brought about by a deep-rooted, insular contempt for the foreigner, and an almost complete ignorance of his commercial methods and their relation to the extraordinary trade developments of the past thirty years.

Handwriting, commercial arithmetic, shorthand, book-keeping, and typewriting are very generally regarded as constituting the only subjects worthy of a place in a commercial course; and even when the claims of higher English, commercial correspondence, business methods, office routine, modern languages, and mercantile law receive attention from clear-sighted and ambitious pupils, their efforts at self-improvement often receive but scanty encouragement from their employers. Moreover, with the exception of foreign languages, the highest type of public commercial education in Scotland deals almost exclusively with the work of the office; and at no centre is there adequate preparation for the training of the foreign commercial traveller. As a great industrial people, with threatened markets in every part of the world, this is perhaps the greatest of all our commercial needs. The immense external trade that Germany has gained in competition with Great Britain and other industrial rivals had to be wooed before it could be won, and the army of wooers she has distributed throughout the world have been thoroughly prepared for their task.

#### HEADMISTRESSES IN CONFERENCE

By E. M. BANCROFT, B.A.  
County High School for Girls, Chelmsford

We shall not readily forget the forty-third annual conference of the Association of Headmistresses in Public Secondary Schools, which was held at St. Paul's School, Hammersmith, on June 8th and 9th, under the presidency of Miss Escott, of Sheffield. From the moment when Miss Gray, hostess, rose to greet the audience with the Irish phrase of "thousand welcomes" to the last farewells uttered as we turned from the garden of grateful shade and greenness to the long and various journeys homeward, hours were fraught with interest. From four quarters of the kingdom we had come headmistresses of some 250 secondary schools for girls, representative of 100 more, all called by the desire for corporate discussion of the new and absorbing problems which the work of so complex an art as education must ceaselessly present.

Twice before has the summer conference gathered under the shadow of war, and each occasion that consciousness has given our problems a wider range, to our deliberations a deeper earnestness, and to ourselves a more solemn sense of the vital issues of responsibilities of our work.

But this year there was a difference. The shadow still hangs over the land, but the light on the horizon, and thus we were conscious of an exhilaration, strange and abounding. We felt that we were on the threshold of a new age, in which there would be much for us to do—an age in which the work of education would be quickened by more vitalising contact with the wider and social activities of the nation, encouraged by a warmer public sympathy, and aided by a more generous financial policy. Thus the keynote of the conference was essentially of strenuous yet hopeful character.

This note was sounded in the opening words of the presidential address, in which Miss Escott hailed the downfall in Europe of despoticism and the rise in our own country of an educational policy, comprehensive and enlightened, initiated by a Minister of Education who has known by personal experience both the ancient traditions of Oxford and the conditions of university work in a great modern industrial centre. Later, resolutions in full detail were passed by the conference warmly approving the reforms outlined by Mr. Fisher on April 19th with regard to the co-ordination of all forms of education from the nursery schools to the universities, and adequate provision of educational opportunities.

rnunity, the raising of our intellectual standards, better prospects for teachers, and a revision of our system of examinations. At the same time a very definite plea was put forward in Miss Fanner's resolution that regulations vitally affecting the work of education should not be imposed upon secondary schools without first being submitted to associations representing those schools. This resolution, which was briefly and forcibly urged, thus emphasised the vital principle that in all great undertakings reform can be of full and practical success only when the authority from without whose work it is to initiate reform works in wise collaboration with those who are directly responsible for carrying it out and still in actual and living contact with the work itself. The problems of the organisation of advanced courses in secondary schools and of the revision of examinations are two strong instances of the desirability of giving an effective voice to the judgments drawn from the practical experience of the teachers before new legislation is passed.

At one stage of her close and wide survey of the educational world and its relation to other spheres of activity the president directed attention to the happy contact now effected between education and the life of the world. A school is no longer a *hortus inclusus*, in which learning is pursued in academic isolation from civic life and local conditions. Though it has a strongly centralised community life of its own, yet it is also in itself a centre of radiating activities which should affect for good the social life of the district. The extent to which headmistresses are realising this aspect of their work and duty was forcibly indicated by the debates dealing with problems of social service. Limits of space forbade more than a bare enumeration of the subjects which evoked not only suggestive papers full of expert knowledge, but also discussions of an animated nature. The range was wide, including, among others, such subjects as war and openings for girls and women, the evils connected with street collections, the better management of kinemas, the prevention of infectious diseases, forms of national service for women and girls, while the secretary of the Girls' Patriotic Union was able to announce the completion of a fund of £5,600 given by the girls of our schools to the "Star and Garter" Home.

It would be an unworthy tribute to the rare quality of the paper on "Education and the Bible," read by Miss Mercier at the close of Saturday morning's session, were I to attempt to indicate its fine treatment and its noble spirit in a brief paragraph. It was a

paper for which a single hearing is quite inadequate. We would fain possess it in printed form for thoughtful reading and re-reading.

The last words of the conference were spoken by Mrs. Woodhouse, the president of 1907. Her speech was one of gracious thanks to the High Mistress of the stately school from which we had received hospitality, but as it closed we heard again the note of solemn gladness with which the conference had opened—gladness at the foreshadowing of great reforms, and at the increasing part which our schools are enabled to take in the national service at a time when our country needs strong qualities of heart and brain in all her sons and daughters. That mood of gratitude and gladness will preserve for us the memory of the conference of 1917.

Miss Reta Oldham (Streatham Hill High School) was elected president of the association for the years 1917-19.

The following resolutions were adopted by the conference:—

That the Association of Headmistresses, recognising the benefits to the profession of teaching which must accrue from the work of the Teachers' Registration Council, cordially welcomes the first printed Register of Teachers, and urges that the Board of Education shall require that after the year 1920 a definite proportion of the staff of all recognised schools shall be on the register.

That the Executive Committee be instructed to consider the desirability of establishing a permanent appointments register for former pupils of secondary schools for girls.

That this conference desires to emphasise the desirability of the general adoption of a school record, and refers back the resolutions dealing with the subject for further consideration by the Executive Committee.

That the members of this association now assembled in conference desire to place on record their hearty approval of the proposals outlined on April 19th by the President of the Board of Education in his statement on the Estimates. The association welcomes in particular the prospect of the following reforms, and hopes that Parliament will carry with as little delay as possible such measures as may be necessary in order to give them effect:—

(a) The complete co-ordination of all forms of education.

(b) The recognition of the claim of the individual upon the State for a complete provision of educational opportunity and of adaptation of this provision to special needs, as shown in the proposals—

(i) To establish nursery schools for very young children and the release of such children from the obligation of attending the formal instruction in a public elementary school;

(ii) To improve the teaching of boys and girls in the upper standards of elementary schools;

(iii) To make better provisions for the intellectual,

moral, and physical discipline of young persons during the period of adolescence;

(iv) To provide maintenance allowances for more promising pupils;

(v) To differentiate between the educational needs of rural and of urban districts.

(c) The recognition that the work of education cannot be effectively done without—

(i) Better salaries and better prospects for teachers;

(ii) A greater number of teachers in proportion to the number of pupils;

(iii) A reduction in the number of examinations which may be taken in schools.

The association further hopes that the leaving age for all pupils in elementary schools without exemption will be fixed for the present not earlier than the last day of the term in which a pupil reaches the age of fourteen years, and that the leaving age may be raised to fifteen within the next few years; that the continued education of young persons who have left school and are below the age of eighteen years may occupy not fewer than twenty hours of the daytime in each week, and may be largely of a general rather than a technical character.

That this conference is of opinion with regard to university education that:—

(a) There should be a common standard of entrance, accepted by all the universities of the British Empire, and Greek should not be a compulsory subject.

(b) Though gratefully recognising the boon which the Universities of Oxford and Cambridge conferred upon the higher education of women by throwing open their examinations for degrees in honours, we hope the time is at hand when the corresponding degrees also will be thrown open to women.

(c) More entrance scholarships are urgently needed, with maintenance and travelling allowances for those not resident in a university town; these scholarships are needed for all subjects, but especially, at the present time, for medicine. There should be an upward age limit for all entrance scholarship examinations.

(d) Any scholarship to be held at a university awarded to a girl candidate under the age of eighteen should be held over until the candidate reaches that age.

That this conference welcomes the constitution of the Secondary-School Examinations Council, since it regards the formation of a co-ordinating authority as an indispensable element in the reform of examinations. But the conference regrets that Circular 906 does not clearly provide for the inclusion on the council of an adequate proportion of teachers in secondary schools.

That the Home Secretary be urged to use his influence with the police authorities to secure the adoption in other districts of such regulations regarding the age of street collectors as are now in force in the metropolitan area.

That the Home Secretary be again approached with a view to the enforcement of stringent regulations on the management of kinemas, and that such regulations be made universal and not limited to the metropolitan area only.

That this conference reaffirms the resolution carried unanimously in 1907, viz.:—That the conference would

welcome on educational grounds the substitution of the metric system for that of existing imperial standard

That regulations should not be imposed upon secondary schools without first being submitted to the associations representing secondary schools.

That the Executive Committee be requested to initiate a Press campaign with regard to girls' education.

Upon the subject of salaries, the resolutions passed were:—

(a) That the Joint Committee of the Headmistresses and Assistant-mistresses be asked to take immediate action as to the method of allocation of the new grant with the view of increasing salaries.

(b) That, since the new Regulations state that the grant, if sanctioned, will be payable for the school year 1916-17, the proper proportion of such grant shall be expended for temporary additions or permanent increases to salaries as from the date when the new grant became operative. But from September, 1917, this proportion of the grant be used entirely for increasing salaries in accordance with the expressed intention of the President of the Board of Education in his speech on the Supplementary Estimates.

(c) That this meeting affirms the desirability of salary scales.

The following resolutions carried by the conference last year were reaffirmed, viz.:—

(1) That any qualification accepted by the Board of Education for entrance to a training college should carry with it a certificate.

(2) That the Board of Education be requested to recognise as qualified for admission to a training college:—

(a) Candidates who have obtained a school certificate granted by the various examination boards which have accepted the principles of Circular 849;

(b) Candidates who have not obtained a school certificate, but at one and the same examination have passed in English, history or geography, arithmetic and two other subjects (of which history or geography may be one).

#### PERSONAL PARAGRAPHS.

**C**HARTERHOUSE has had many losses in this war, but none perhaps more grievous than that of Lt.-Col. Harry Kemble D.S.O., M.C., commanding the 23rd London Regiment. He joined the staff at Charterhouse in 1901, and the thirteen years of his time there—for he "joined up" at the outbreak of war—were very full years—full of usefulness and happiness to others. He held a commission in the school O.T.C., and was Major Smart's right-hand man. He "ran" the choir very efficiently and keenly, after Mr. Girdlestone's departure. He became house tutor of Hodgsonites when Mr. Bryant took over that house. He loved his work and his games, his colleagues and his boys. Everything he did was thorough and genuine, and he was more than popular—he was loved by all who

had the privilege to know him. With these grand credentials he was bound to prove a successful leader of men in the field, and his Charterhouse nickname, "The Colonel," became in due course his proper title of address. He went to the front in March, 1915, and was mentioned in dispatches in January, 1916 and 1917, being awarded both the Military Cross and the D.S.O. He had been in command of a battalion for more than a year, when, on June 7th, he was dangerously wounded, and died two days later. If he had lived a few hours longer, he would have known that the men, whom he had trained, did more than justice to their commander at the taking of the Messines Ridge. He spent two days of his last leave at Charterhouse, had two glorious games of fives, which he played and loved so well, and seemed to all to be happier and prouder, if a little quieter, than ever before. He felt that he had done well, but he mourned the loss of many of his brave fellows. The news of his dangerous wounds reached Charterhouse on Sunday, June 10th, and early on Monday morning the flag flying at half-mast on Green silently told the school of the death of a loved friend and a gallant soldier.

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THE announcement of the approaching retirement of Miss Rigg, to take effect at Christmas, from the post of headmistress of the Mary Datchelor School, Camberwell, came with surprise to many who find it difficult to dissociate the school from its creator, its first headmistress. The school, one of the older established London schools, has been a pioneer in girls' education, particularly, perhaps, through the training college which for so long was carried on at the school—a pioneer in the creation of the teaching profession; and very much of the value of its work has come from the wisdom of its headmistress. Miss Rigg is pre-eminently a teacher, and it is an instance of her remarkable powers of work that even when the school contained well over 400 girls, she still kept a good deal of the teaching in her own hands. Her own culture is so real and sound that she has been the best possible guide for girls growing up among the confusing currents of modern literature. The task of a headmistress calls for an understanding of widely differing temperaments. The Mary Datchelor staff has always been large, and the numbers of girls who have passed through the school very great indeed. But no member of the staff who went for help or advice in illness or other difficulties, or any old pupil, no matter how "old," who required help in her career or sympathy in trouble, failed to obtain what

she required. Miss Rigg's interest in the subsequent careers of her girls has always been lively and her memory unfailing. Her most outstanding characteristic, however, is that which has distinguished all the great leaders of women's education—a sense of duty so dominating that it is all-pervading. Neither friendship, nor pleasure, nor personal predilection—nothing has come before duty towards the school. It is because from Miss Rigg they have learnt the great lesson of duty, and have seen duty combined with a loving and gracious personality, that so many of the younger generation of teachers look back on their connection with her with undying gratitude. She carries with her into retirement the good wishes of all who have ever come under her influence.

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LT.-COL. J. H. CHADWICK, who was killed in action on May 2nd, was one of the most promising of our younger men. His career at Trinity and afterwards as an inspector for the Board of Education has been referred to in the newspapers, and his rapid promotion in his regiment, where he earned the respect and affection of all, has attracted notice. But those who knew him in the earlier days at Borough Road College will rather dwell on the simplicity of his character and the solid strength of his life, even when he was but emerging from boyhood. He was a great influence with his fellows, though he was the last to suspect it; and in his successes, which crowded one another, he never thought, as so many do, of turning an unseeing eye on the elementary school which now laments the loss of one of the finest of her children.

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THE chief criticism levelled against the membership of the new committee on salaries is that the small number of women represents the women who are a large majority of the teachers. The chairman of the committee possesses a knowledge of the work of the London Education Committee, and has had a considerable amount of judicial experience. The education authorities are well represented by Dr. Brackenbury, Mr. Alsop, and Mr. Mellish. Dr. Brackenbury is the president of the Association of Education Committees; Mr. Alsop is the chairman of the Education Committee of the Municipal Corporations' Committees Association, and also chairman of the Liverpool Education Committee; and Mr. Mellish is chairman of the Nottinghamshire Education Committee. Administrators are represented in the persons of Mr. Pullinger, the Director of Education for Wiltshire, and Mr. A. R. Pickles, the Director of Education

for Burnley. The teachers of elementary schools are represented by Mr. Underwood and Mr. Crook, and by Mr. Pearson and Miss Cleghorn, while Mr. Frank Roscoe represents the element of co-ordination with other branches of the profession.

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AT the request of the council of the Girls' Public Day School Trust, Miss Escott, headmistress of Sheffield High School, who delivered her presidential address to the Association of Headmistresses early in June, is moving to Clapham High School in succession to Miss Paul, who is retiring on account of ill-health. Clapham High School demands exceptional organising powers in its headmistress, since it is the centre of no fewer than four courses of training for teachers. During Miss Paul's recent absence Miss E. S. Lees, the capable representative of the Assistant-mistresses' Association on the Registration Council, has been acting as headmistress. She is a woman of wide experience of education, whose knowledge of present-day problems is at least as great as that of most headmistresses.

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EDUCATION is recognised in the list of Birthday Honours; indeed, one might say four aspects of it: the benefactor in Sir William Lever, who is promoted to the peerage; the Parliamentary educationist in Sir Philip Magnus, the member for London University, who has received a baronetcy; the organiser in Mr. Graham Balfour, the Director of Education for Staffordshire; and the inspectorate in Mr. Fishwick, Sub-Inspector of Schools of the Board of Education.

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ONE of the most effective criticisms of university education, which, perhaps, is applicable to education as a whole, comes from the trenches. A university undergraduate home on leave met the master of his college, and acknowledged that among other subjects of conversation in the trenches was university reform. Forthwith the master inquired what kind of university reform was most popular. The reply came in the question: "Why don't you teach at the universities some subject in which we are interested?"

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THE death is announced of Mr. W. J. Butcher, formerly headmaster of Ashbourne Grammar School, Derbyshire. Mr. Butcher was a graduate of the University of London, and was a master at the Yorkshire Society's School, at Manor House School, at Emanuel School, Wandsworth, and at Tiffins' School, Kingston-on-Thames, before becoming head-

master of Ashbourne Grammar School 1894. For some time he was also lecturer under the Education Committee of the Shire County Council.

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THE name of Temp. Capt. G. T. Hankin of the Oxford and Bucks Light Infantry, was included among those who have been brought to the notice of the Secretary of State for War for valuable services rendered in connection with the war. Mr. Hankin was formerly an energetic member of the Assistant-masters' Association. He then went to the Board of Education as an inspector in the Secondary School Branch.

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MR. F. W. R. BROWN, for fourteen years science master at St. Dunstan's College, Cambridge, was killed in action on May 6th. Mr. Brown was a Londoner and a graduate of London University. He had been a member of the Assistant-masters' Association for some years, and had taken great interest in the work of the association.

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AMONG other schoolmasters who have been killed at the front are Mr. J. W. Parry, of Richmond County School; Mr. C. R. Pries, of St. Neot's School, Eversley; Mr. Coward, of Newcastle High School; and Mr. Mitchell, of the Merchant Taylors' School. Of Mr. Mitchell the senior major of his battalion writes: "I cannot tell in words the nobleness of his life and work amongst our officers and men. To all ranks alike, officers and men, he set the greatest example of stout-hearted courageous, yet a humble and cheerful Christian life."

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THE REV. H. COSTLEY-WHITE has been appointed principal of Liverpool College. Mr. Costley-White was educated at Malvern and at Balliol College, Oxford. He was a master from 1901-3 at Sherborne School, and at Rugby School from 1903-10. He then held for a short period the headmastership at Bradfield College, after which he returned to Rugby as a master.

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THE REV. F. G. FORDER, of Charterhouse School, has been appointed headmaster of the Grammar School, Skipton. Mr. Forder was educated at St. Olave's Grammar School, Southwark, and at Christ's College, Cambridge. He has been a science master at Charterhouse since 1906.

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MISS BREW, of Northampton High School, has been appointed headmistress of Wickham High School in succession to Miss Christie ONLOOKER.

## EDUCATIONAL POLICY AND PRACTICE.<sup>1</sup>

By Miss A. E. ESCOTT.

High School for Girls, Sheffield.

THE year 1917 will be a memorable one in the history of the world, and also in the history of education. Memorable in the history of the world because we trust that it will mark the approaching downfall of the most tyrannical and brutal power that civilisation has ever known; memorable in the history of education because we hope—and indeed have reason to believe that the hope will be realised—that it will mark the rise of an educational policy both comprehensive and enlightened.

The appointment as President of the Board of Education of a man of wide educational experience who has an inside knowledge of the conditions both of the older University of Oxford with its humanistic traditions, and of one of the youngest of our universities—a university situated in a great industrial centre, adapting itself to the commerce of a world-famous city—makes us confident that the nation will not neglect the great opportunity which has arisen. Mr. Fisher, before his appointment to the Board, realised that the time had come for problems of reconstruction to be thought out, and in the early autumn of 1916 he convened a conference at the University of Sheffield, when the many schemes which have occupied the time and thought of all educational bodies during the past few months were fully discussed. In his speech on April 19th the President showed that educational advance was impossible until the nation was prepared to spend more money to enable it to call to its service a much larger and better equipped body of teachers than heretofore. He made it clear that the profession must be made attractive if it is to compete with the many other professions—constantly increasing in number—which are demanding the services of women. The work of education, one of the most important, if not the most important, factors of our national life, must enlist in its service sympathetic able women, and having enlisted them, it is for the nation to see to it that educational efficiency is retained. Better salaries and the knowledge that there will be a pension at the end of their service will do much, but not all, towards this end. We must all have known teachers who, when they should have been spending time or money, or both, on "re-creating" themselves, have had to deny themselves in order to put aside a pittance for sickness or old age. We all believe in wise giving, wise spending, and wise saving, but with the salaries that many teachers have had, the "saving" has been difficult indeed. This we hope will soon be a thing of the past. But the Government cannot do all. Heads of schools must do their part if teachers, and through them their pupils, are to have more "life." If a teacher is not given the opportunity to be in touch with life and its realities her teaching must in time suffer. Education is worth little unless it tends to the development of the whole human being, and a teacher who lives her life within the school walls

and in uncongenial lodgings must soon cease to view life as a whole. Times have changed, and there are now far more possibilities for teachers to take part in the civic life around them than was formerly the case, and it is for heads to see that there are both time and opportunity for such participation. May I even dare to suggest that it might be well for some of us to attend fewer committee meetings, and hand on some of our duties and privileges to members of our staff?

Governing bodies would do well to follow the precedent already established in some schools and colleges which free their teachers for a term or longer at the end of every seven years of service for this "re-creation" of mind and body. Part of the new grant might well be allocated to this purpose. If governing bodies and heads will thus work together to attract to the teaching profession the right type of teacher, a recruiting campaign might be started with good heart, since we shall be able to give to parents, students, and scholars alike the promise of great national service which will fit the rising generations for the important work before them. But such a campaign must not be delayed. Schemes of reform must remain schemes until we have teachers. We welcome the suggestion of nursery and continuation schools, but we have our part to do in helping to staff them. In our great cities, small country towns, and remote rural districts the problem will, in each case, be different, and those of us who are responsible for education must help to think out the best plan for the district in which we live. In large industrial centres it may be well to have nursery schools for children from two to six years of age. But may I say, in passing that there is a growing feeling that in *normal* times the mother is the right person to have charge of the child up to two years of age, and the State would do well to grant pensions to mothers who must without such aid act as breadwinners? This would seem a more human plan, and should be better for both mother and children than the establishment of crèches for children below the age of two. Much could be said as to the ideal building and equipment of nursery schools, but this is not the place, so I will content myself with saying that we need teachers specially trained for this work, who will put health, the formation of right habits, and play before instruction. A valuable work might be done in these schools under wise guidance to foster habits of self-control, so sadly lacking in young people of the present day. The importance of right education—I do not mean instruction—up to the age of six is too little realised. How many so-called educated parents, indeed, think that nothing beyond physical oversight is needed for children under seven. As to the education between six and fourteen, can we not back up our colleagues in the elementary schools by protesting against the false economy which pushes children into a higher standard before mental growth warrants it, in order to make room in the lower standards? When shall we learn and act on the knowledge that a forced pace causes stunted growth?

Every child able to profit by a secondary education should, as a rule, pass into a secondary school, without fee, by the age of eleven, since many new

<sup>1</sup> Presidential address delivered to the Association of Headmistresses on June 6th, 1917.

subjects must be begun, and these should be taken gradually. If no child of sufficient promise is to be debarred from such education more secondary schools must be built and more teachers trained.

For those who stay on at the elementary schools until they are fourteen continuation schools must come in the near future, and it is the duty of everyone who cares for the development of the individual and the future of the nation to give most serious thought to the working of such schools. More places will be wanted in elementary schools if children are to stay until the end of the term in which their fourteenth birthday occurs, and it might be well to consider the housing of both nursery and continuation schools in buildings specially adapted for the purposes, and use the present buildings for the six- to fourteen-year-olds.

If employers will enter into the scheme for continuation work, as there is every promise they will do, it seems that plans might be devised—possibly differing in, and according to, different districts and part-time occupations—by which the buildings could be used before 5 p.m. by two sets of scholars. In the evening they might be used for recreation, popular lectures, choral singing, etc., at all of which attendance should be voluntary. The compulsory day curriculum should include history, with literature, civics, commercial geography, drawing, singing, physical exercises, with wise talks on sex hygiene given by a man and woman doctor to boys and girls respectively, preferably by those keenly interested in social work. Possibly in large cities it would be well to arrange different crafts in different schools to suit varying occupations. There are at the present moment women students in our training colleges admirably fitted to do a great part of the work in continuation schools, and if, as does not seem unlikely, it becomes imperative, for economic reasons, to open continuation schools immediately on the conclusion of the war, it would be well to know beforehand what teachers could be called upon for this all-important work.

I have touched on, very inadequately, some of the reforms which will call on the best intellect of the country and on the sympathy of those who have intimate knowledge of young life, if the reforms are to result in true liberty and full development of the individual.

As regards *secondary* schools, we heartily welcome the proposed extension of grants to younger children, the endeavour to encourage advanced work in schools, as well as the provision for the increased remuneration of teachers, to which I referred earlier. All these reforms should tend to secure a higher standard of efficiency. But unless there is much latitude given, and unless there is wise and helpful co-operation between the Board of Education, the local authorities, and the heads of schools, more harm than good may result from the suggested "advanced courses" in mathematics and science, classics and modern studies.

The Regulations state that in the majority of schools the effective organisation of an "advanced course" is not at present possible. It also suggests that in most schools not more than one of such courses should be organised, probably two in a large school, and in rare cases all three. It is furthermore suggested that local authorities and governing bodies should endeavour to

arrange that each of the three groups shall be represented at a school or schools within the area, so that overlapping, as well as the total absence of provision for any of the three groups, may be avoided. This seems to imply that schools must be definitely planned to specialise in one, in the case of a large school two, of the groups, and also that a grant will not be sanctioned except in the case of very advanced work. If pupils want to specialise in a group not taken in that particular school, they must be transferred to another school, and, in the case of smaller towns, this would necessitate the payment of maintenance grants or travelling expenses.

Supposing pupils knew when they entered a secondary school in what subjects they would specialise at the age of sixteen or seventeen, the parents could choose the school accordingly; but such is rarely the case. What, then, will be the effect of transferring at the age of sixteen or so on the pupil, on the rest of the school, and on the staff? Total uprooting at such an age seems as though it would be disastrous to the individual, especially if the secondary school was not entered until the age of twelve. Just at the time when, as members of the Sixth Form, the pupils would be getting that increased responsibility which tends to self-development, they would be plunged into new surroundings, where they were strangers to the fellow-pupils, and where they would find it difficult, if not impossible, to make their influence felt. Then, too, what would be the effect on the school if those to whom it would naturally look for leadership were removed just as their power was being realised? Still further, could we ever hope to get first-rate teaching in our Middle Forms if the teacher knew that she was condemned never to have a chance of advanced work in her subjects? On the other hand, we cannot see that such a scheme would result in the saving of teaching power—a vital matter in these days. But can it be carried out without irreparable loss to the individual and to the school? In conference I believe that some plan might be devised, e.g. in towns with more than one school it might be possible so to arrange the time-table that pupils might interchange for certain periods in the week and still belong to the school which they have come to look upon as their own, but some other scheme would have to be thought out for isolated schools.

Much of the difficulty in girls' schools would be done away with if transference affected only those of outstanding power who would be likely to take a high place in an honours degree list. But the fear is that governing bodies would discourage advanced work unless the special grant were available, or, in the case where several schools were under the same authority, would transfer girls, contrary to the advice of the headmistress, in order to make up "a reasonable number" for the course which is a necessary condition before the special grant is sanctioned. I have pointed out a few only of the difficulties I foresee, and my sole reason for dwelling on them is that if we are to secure the good without an undue amount of evil, the authorities must proceed cautiously, and must enforce the giving of much liberty to heads of schools to take them into consultation before changes are made.

Another scheme which must have our immediate and serious attention, a scheme which will be fraught with danger unless there is the same close co-operation between the authorities and the teachers, is the enlarging of the areas for the control of higher education. We have been told that such action would stimulate progress and improve organisation. But there is a danger very real to many—that of increased bureaucracy. The success of such a scheme will seem to depend largely on the control which is exercised in the choice of representatives on any such governing committee. Surely on any committee controlling higher education of a given area it is not too much to ask that there should be representatives both of a neighbouring university and of secondary schools in the district. Some such composition as that of the Northern Universities' Joint Matriculation Board should be feasible, widened as might prove necessary.

One hesitates to think that in the past some of the local education authorities have chosen their co-opted members, not because of the expert advice they would be capable of giving, but because they would be negligible quantities. But in practice this is what has happened, and many of the difficulties which have arisen could have been avoided if governing bodies of secondary schools and training colleges had been obliged to select representatives from universities and schools, one from each, at least, a woman where women students and girls were concerned.

If you will bear with me, there is one other subject on which I wish to speak very shortly. It is with real hesitation that I venture to mention "curriculum," which many will think has been discussed *ad nauseam*. My only excuse is that if schools get the increased grant which has been asked for in the Estimates, there may be some money to spare on equipment after there has been a generous allocation to salaries. Another speaker will, I hope, advocate the teaching of domestic subjects to every girl, irrespective of her intellectual power, so I need not dwell on that except to emphasise the point that such teaching must be preceded by a course of general elementary experimental science, and that up to the age of sixteen the scientific aim should predominate.

From inquiries which have been made it is clear that there is not sufficient laboratory accommodation in many schools to allow of as much experimental work as is needed. The teaching of botany too often follows that of nature-study in the lower school, without being preceded by a course of elementary chemistry and physics, and is treated as a classroom rather than as a laboratory subject. Such botany teaching has very little educational value, is not science in any sense of the word, and can give no scientific training. A knowledge of the structure, growth, and function of plants cannot be understood without a knowledge of elementary chemistry and physics. And these must be treated experimentally, which is not possible without adequate laboratories.

Science in girls' schools ought to be greatly developed as part of a liberal education and with special reference to life around them.

It would be in the interest of both science and mathematics if the science teacher had a good know-

ledge of mathematics, and the mathematical teacher a working knowledge of chemistry and physics. In the beginning of general elementary science it would be very helpful for one teacher to take both the science and mathematics in a form, and it is scarcely necessary to say that in advanced work the mathematical teacher should have a knowledge of physics. But this is not always the case, since mathematics may be an arts-subject.

Section 7, chap. ii. of the new Regulations states:—"A curriculum including two languages other than English, but making no provision for instruction in Latin, will only be approved where the Board is satisfied that the omission of Latin is for the educational advantage of the school."

There seems to be considerable diversity of opinion in schools where two languages other than English are taught, first as to what this second language should be, and secondly, at what age each should be begun.

Schools that have begun French at the age of ten or earlier, and then added Latin for four years from the age of twelve to that of sixteen, have found the latter language not only of great educational value in itself, but also a real help to English and an excellent foundation for the later study of other languages. If there is a thorough—not necessarily advanced—knowledge of French and Latin when the first examination is taken, progress in other languages will be rapid when specialisation becomes possible.

At the end of the four years it is questionable whether a girl's time is wisely spent in going on with Latin unless she shows real promise of doing advanced work in the subject. Further, no scheme of education can be considered liberal or complete unless it includes music. The supreme value of music to humanity has been proved beyond question during the last three strenuous years, and of its great value as an educative power there is abundant evidence from the times of the ancient Greeks to the present day. In England, so long ago as 1553, Dr. Christopher Tye wrote that music was "very necessary for studentes after theyr studye to fyle theyr wyttes." And it is just this sharpening, this stimulating of the intellect and imagination which gives the subject of music, when rightly taught, an educative value second to none in the curriculum. Now, by music I do not mean learning merely to play an instrument, but some such scheme of work as that outlined in the interesting little book, "The Musical Education of the Child,"<sup>2</sup> or in "Music as a Language."<sup>3</sup> These schemes include aural training, harmony, sight-singing, and musical appreciation, subjects which must be taught by trained and experienced teachers in class, and from an educational point of view. Work of this kind is already being done in a few schools.

We all recognise the valuable training given to our children by the study of drawing and colour work. Is it too much to hope that within the next few years we may see the sister art of music entered as a class subject on the time-table of every school in the kingdom? It is only thus that we can get intelligent and appreciative listeners.

<sup>2</sup> By Stewart Macpherson. (Joseph Williams and Co.)  
<sup>3</sup> By E. Home. (Oxford University Press.)

Two practical difficulties may present themselves: first, the lack of trained teachers, and secondly, the difficulty of finding other work to make a full-time post for the teacher when found. Would it not be possible for such teachers to widen their training so as to include elocution, by which I mean clear enunciation and articulation, a subject which is too often woefully neglected? I know the thought will be in some of your minds: "How are we to find time for any more subjects?" My answer is, "By cutting down the time given to others," and when examinations become more rational I fully believe that this can be done without impairing efficiency.

Let us honestly ask ourselves: "Is our curriculum better fitted for developing the 90 per cent. or the 10 per cent.? In after-life which will give the 90 per cent. more real help and enjoyment, advanced mathematics or the knowledge of home crafts, the power of appreciating good music or of writing correct Latin prose?"

Let the 10 per cent. do the advanced work, but let the 90 per cent., after they have had the training that all need in "intellectual initiative and in mental facility," give their time to the humanities, science of everyday life, arts and crafts.

I cannot bring these fragmentary thoughts to a close without paying a tribute to the men and women who have made such splendid use of the very imperfect education which was open to them. The heroes of the Navy and Army, the million women who are doing so well work to which prior to 1914 they were utterly unaccustomed, deserve our undying admiration. If an inadequate education can produce such results, what will the nation not achieve when we get nearer *true education*?

In conclusion I should like to quote a passage from Mr. Clutton-Brock's introduction to Mr. Kenneth Richmond's "Permanent Values in Education":—

"Our ideal must be to educate all as men and women, as members of the nation, so that all may be able to enjoy the fullness of that life which the nation offers to its children. If we have that purpose we shall communicate it also to those whom we teach; our whole education will be quickened by it, and we shall find a new meaning in the words, 'Inasmuch as ye have done it unto one of these little ones, ye have done it unto Me.'"

Since I wrote these words Circular 996 has been presented to us, and whilst we heartily welcome the establishment of a representative body to deal with the question of examinations in secondary schools, the first duty of which will be to remove the burden of the multiplicity of examinations, we cannot but regret the constitution of the council. One-half of the representatives will probably be drawn from the examining bodies of the universities, only one of which bodies is sufficiently enlightened to have acting teachers on its board. It is difficult to see how adequate reform of examinations is to be carried out by a council of which half the members have vested interests in the examinations which are to be reformed. But we must take hope from the words:—"The council will, in the

*first instance*, be constituted as laid down in Circular 996."

The circular also tells us that "the council will also be at liberty to submit to the co-ordinating authority [i.e. the Board of Education] from time to time suggestions for the improvement of the scheme of examinations, especially with the view of keeping the examinations in touch with the development of new studies and methods in schools." Our particular interest is the scheme of reform for the examinations of girls, which we feel will be urgent in the near future, as Circular 996 makes absolutely no provision for the inclusion of women on the council. We know we can safely trust ourselves to the present Registration Council and the Northern Matriculation Board to see that women are not *excluded*; but should the inclusion of women on a council dealing with the examination of all the girls in secondary schools in the kingdom be dependent on such chance election?

## INTERMEDIATE EDUCATION IN WALES.

THE recently issued annual report of the Board of Education under Section 15 of the Welsh Intermediate Education Act shows, like the report of last year, a record of arrested development in the matter of accommodation and equipment, but of continued progress in efficiency, maintained under increasingly difficult conditions. Physical training is beginning to receive attention, but neither the time given to the work nor the provision of accommodation, material, and staff is as yet adequate. The Board regrets that swimming does not receive due encouragement, even when facilities for it exist; in one school known to the writer the chairman of the governors for years urged the provision of a swimming bath, but the County Education Committee, which maintained the buildings, refused, even at a time when an opportunity was afforded by the carrying out of extensive alterations. School libraries are again mentioned, and the attention of those responsible for them is directed to the Board's publication, "A Nation and its Books," which contains a (by no means complete) list of books in Welsh and relating to modern Wales. Schools are assured that they have no need to fear for their own material success and that of their pupils by reason of giving due attention to the language and literature of the country.

Domestic subjects are not sufficiently fostered in girls' schools. A percentage of 24.2 of the girls go into the elementary branch of the teaching profession, while 39 per cent. remain at home. Cookery and needlework are generally taught, laundry work, housewifery, and hygiene less commonly; several schools have a completely furnished sitting-room, kitchen, and bedroom, which are used for practice in housecraft; but laundry work is difficult to arrange. In a certain school in Glamorgan an elaborate room was fitted up, with ventilated room, steam-heated drying chamber, etc., but was disused and turned to other purposes because the girls would not bring things from home to wash, the school dusters did not provide sufficient practice, and the expedient of using tablecloths as

ers and then sending them to be washed seemed educationally and economically unjustifiable. The most interesting part of the report is that which deals with the attempt made at Welshpool Boys' Intermediate School to give a rural bias to the teaching, in preserving the purely "liberal" character of the training for pupils intending to enter the universities or other professions. The undoubted value of this method seems to lie in the stimulus given to the pupils. It is asking more than the average boy is capable of to expect him to see the future value of the apparently isolated activities he is expected to pursue. In the Latin Form he probably comes near enough to "years of discretion" to get a glimpse of the unity of knowledge, and of the bearing of the subjects of his curriculum on his future life and character. A wise teacher will introduce such notions at the earliest and every opportunity, but his efforts will be all the more successful if they are part of a definitely stated and generally understood school plan. The danger of the method lies in the possibility that the school may get to be in appearance, and in fact, a "trade school." It is not the business of a secondary school to train engineers or dyers, and it is failing in its duty if the pupils are taught only such chemistry or mathematics as will be "useful to them in their work." This is only another form of cramming. But when the principles and the chief facts of a subject are thoroughly taught, while the importance of their application in work and business is vividly present to the mind of the pupil, he is likely to give his attention to them with a zest which is at present far too uncommon.

The most melancholy part of the report is that which deals with figures. It is satisfactory to note an increase of 868 pupils in the 101 schools, now making a total of 16,100. But the salary figures are an eloquent appeal for the proper application of the Fisher Committee's recommendations. Eleven headmasters and two headmistresses get more than £500 a year; eleven and thirteen respectively get less than £300—which is quite inadequate; the figure of all new Glamorgan appointments, £300—£10—£350, is no salary to attract able men and women. The assistants are, of course, still worse off; three men and no women get £300; 123 men and 344 women get less than £150, of whom five men and thirty-one women get less than £100 a year. Comment is needless, but this state of things will have to be altered, and that before very much more money is spent on the other matters dear to the heart of the average governor.

## ITEMS OF INTEREST.

### GENERAL.

Two articles which appear elsewhere in this issue deal with the Departmental Committee appointed by the President of the Board of Education to inquire into the principles which should determine the construction of scales of salary for teachers in elementary schools, due regard being had to locality, duties, qualifications, sex, and other considerations consistent with the organisation of the teaching service throughout the country, on a system conducive to the efficiency of national education. The committee will be at liberty

to illustrate any system of scales which it recommends by such specific sums of money as it thinks fit; but it is not asked to consider the question of the amounts by which existing scales of salary should be improved in particular areas, or the sources from which the amounts required for that purpose should be provided. Mr. Fisher intends also to deal with teachers in secondary, technical, and other schools by a further reference to a second committee connected with this committee in respect of both constitution and functions. The members of the committee already appointed are:—Sir H. L. Stephen (chairman), Miss M. M. Allan, Mr. J. W. Alsop, Dr. H. B. Brackenbury, Miss I. Cleghorn, Mr. C. W. Crook, Mr. W. R. Davies, C.B., Miss I. A. Dickson, H.M.I., Mr. A. J. Flavell, Mr. H. Mellish, Mr. H. Pearson, Mr. A. R. Pickles, Mr. W. Pullinger, Mr. F. Roscoe, Mr. T. H. J. Underdown, Miss Hermione Unwin, and the Rev. D. H. Williams, with Mr. A. H. Wood as secretary, to whom all communications should be addressed at the office of the Board of Education.

COMMENT has been made on more than one occasion in these columns on the small salaries paid to teachers in the education service of the Cape of Good Hope Province. It is announced that a new scale of salaries to date from April 1st is to be fixed by Ordinance of the Provincial Council. This sign of progress is reflected in the emoluments offered in the advertisements of vacancies in the *Education Gazette*, which are higher than they used to be, although they still seem somewhat inadequate.

It is now many years since Huxley said that "what people call applied science is nothing but the application of pure science to particular classes of problems." There never was a time since Huxley's day when these words did not need to be "rubbed in," and there never was a time when they needed rubbing in more than at present, when the get-rich-quickly order of educational reformer thinks that industrial supremacy can be secured by the spread of technical instruction. Technical instruction is indeed essential, but for its lasting efficiency it is absolutely dependent on the disinterested pursuit of scientific investigation. By a coincidence which is, after all, perhaps not very curious, Huxley's saying has recently been quoted by Sir R. T. Glazebrook in his Rede lecture, in which he held that the universities must strive in the first place for the advancement of pure science; and it has been adopted as the motto of the volume entitled "Science and the Nation," in which a band of distinguished specialists, all Cambridge men, work out the same theme, each with reference to his own branch of scientific inquiry. This book, just issued by the Cambridge University Press, is edited by the Master of Downing, and has an introduction by Lord Moulton. It illustrates by concrete examples the real sources of progress in knowledge, and makes clear to the layman the position of research as an indispensable factor in national prosperity.

SIR HENRY NEWBOLT's article on "Poetry and Education" in the June number of the *English Review* is a contribution of some weight towards the educational

controversy of the hour. A literary man, whose interests are yet essentially concrete—for a belief in the civilising mission of Britain may be said to be the inspiring motive of his poetry—he is specially fitted to hold the balance between the claims of humanistic and scientific studies. He is too much a practical man of the modern world to undervalue the necessity of scientific training, and too much a man of letters with an instinct for style and a lover of the best in literature to be content to deprive the coming generations of contact with the great imaginations of the past. Bearing this in mind, both sides will do well to ponder his words. For the classicist especially he has some useful advice. He recalls Wordsworth's criticism in "The Prelude" of the education of his day (the old classical curriculum), that it was occupied with "formalities" and failed to touch the heart. We may remember that Tennyson's criticism in that fine early sonnet of his, "Therefore your halls, your ancient colleges" (to be found in the "Life"), was just as severe and even more indignant. So Sir Henry, like his great predecessors, wants our literary education to be more really humane—to cultivate the heart and the imagination. "If we give up half the week to science, we can perhaps no longer afford to teach literature as grammar or as archaeology, but we shall still have ample time to teach it as literature." And this literature is to include modern authors as well as ancient, and (as Wordsworth also wished) contemporary poets. Lastly, the great writers should be presented so far as possible whole; boys who read them without "frank guidance" lose "the incomparable lesson of their human infirmity and their superhuman nobility."

In the debate in the House of Lords on the public schools, as reported in the *Times Educational Supplement* for June 14th, the Earl of Crawford, speaking for the Board of Education, pleaded for co-ordination between the public schools and other secondary schools with special reference to inspection and examinations. Of the seven public schools, two—Harrow and Rugby—and of the 110 schools of the Headmasters' Conference, thirty-six, have been inspected by the Board of Education. The Royal Naval Schools at Dartmouth and Osborne have also been inspected. In the thousand secondary schools inspected by the Board there is preparation for no fewer than one hundred different current and specialised examinations, and in connection with the efforts of the Board to simplify this distracting and paralysing examinations system the public schools can, if they care to co-operate, contribute much towards educational progress.

DR. H. B. BRACKENBURY presided over the annual meeting of the Association of Education Committees, and stated that abundance of inquiry has brought to light a remarkable unanimity of conclusion on some broad fundamental points with reference to the future of education in this country. Every boy and girl must be certain of a full period of school instruction until the fourteenth year is completed. Schools or classes must be provided for continued education and supervision "in some sufficient degree" of boys and girls between the ages of fourteen and eighteen. All scholars who are found suitable should be able to pro-

ceed to the universities or higher technical coll and provision should be fully made to secure such a higher education. Every child should re some training in manual work or domestic sci and in at least the basic principles and metho physical science; but, subject to these definite visions, school curricula should be varied to su needs of a locality or of a specific walk of Teachers should have a much improved status, ga increased emoluments, and a more perfect trainin

THE President of the Board of Education, in address at the same meeting, entered a plea that assembly of wise educational authorities should gi little concentrated light upon the suggestion that curriculum of the elementary schools should be tailed. The Board attaches the greatest value to thorough grounding in the "three R's," and cer subjects like gardening and nature-study have a sti lative effect which is beneficial to the study of the "t R's"; other studies have similar uses, and people not be in too great a hurry to condemn the multip of subjects. Since elementary education should compulsory up to fourteen, the association has a l and important task in raising the level of second education, which is, as a matter of common kn ledge, the weakest part of our educational system.

OWING to the urgent demand for further accommodation for war staff which must be housed in immediate vicinity of the War Office and Admiralty, the offices of the Board of Education are to be removed to a part of the buildings of the Victoria and Albert Museum, South Kensington. Although the administrative offices of the Board will be at South Kensington, a sufficient number of rooms in Whitehall will be retained for the use of the President, Parliamentary Secretary, and Permanent Secretary of the Board for conferences, deputations, and interviews. precise date on which the Board will take up its quarters, and the arrangements to be made for correspondence during and after the actual period of removal, will be announced later. In the meantime correspondence should continue to be addressed to Whitehall in the usual way.

MISS M. SOPHIA JEVONS, a member of the London Education Committee, contributes to *The Child* for April a brief account of the medical side of care committee work, in which she appeals for more work on the care committees, with particular reference to the new development of "after-care" work. Although this work has, so far, dealt entirely with the primary schools, there can be little doubt that the "after-care" work will gradually expand until it covers some at least of the secondary schools. In that event the need for workers will become more pronounced. It is to be hoped that as much war work to see that the present soldiers children shall in years to come be able to play a part of responsible men and women in the world. It is to be seen that soldiers have a sufficient supply of cigarettes. A care committee worker should be an all-round person, but, above all, she should have imagination and human sympathy to understand lives whose troubles and difficulties are such as does not herself experience, and who is broad-min

ugh not to regard ignorance and other faults as if they were of the nature of deadly sins. Those, in London, who wish to help should send their names to the Education Office, Victoria Embankment, W.C. RECENTLY a child was summoned for non-attendance at school. In defence it was stated that the child attended a private school, and the mother gave evidence that she was satisfied with the child's education. Local education officials, it is reported, stated that in their view the school was unsatisfactory and must be closed. The magistrates dismissed the case. This incident is thought to point to the editorial statement in *Secondary Education* for June:—"There is greater need than ever before for a strenuous propaganda to ensure a recognised and honourable position for private schools in the national scheme of education." The editor fears that private schools will not be recognised by education authorities as schools at all. It may be possible to effect a boycott of a similar character in connection with the proposed constitution of the "Secondary-school Examinations Council." The College of Preceptors has conducted school examinations for years; early successes are asserted to have been a prime factor in the foundation of the "Locals" examinations in the older universities; it, moreover, made the first attempt to establish a teachers' register; yet the College of Preceptors is not to be directly represented upon the new Examinations Council.

The teacher of geography frequently desires illustrative material, such as specimens, maps, and pictures. Occasionally he finds that a manufacturer will supply specimens, or a British Dominion will send him maps and illustrated booklets, or will lend him lantern slides. But these are fortuitous experiences, and there is no published list to guide the busy teacher. The *Journal of Geography* for May, however, devotes practically a whole issue, more than thirty pages, to a classified list of books, pamphlets, etc., which the teacher can obtain free, or for a few pence. For example, from official sources at Washington he may obtain for 9d. a description of the scenic features of the Glacier National Park; various immigration commissions supply freely accounts of the districts which they serve; a manufacturing firm at Fall River (Mass.) distributes a historical survey of manufacturing at that centre throughout the nineteenth century; and the Pan-American Union sends descriptions in separate books of the States of South America.

THE Manchester branch of the Geographical Association is arranging for a fortnight's field work in Snowdonia. The district will be studied in all its aspects—geological, glacial, and botanical especially. The programme includes the ascent of Snowdon, and visits to Cwm Glás, Cwm Dyli, Devil's Kitchen (Twll Du), Cwm Llanberis, slate quarries and copper mines, and possibly the Transatlantic Marconi station, together with practical work in map-making, sketching, and plant ecology. The leader of the excursions is Mr. J. V. Davis, lecturer in geography, geology, and botany in the Cheshire County Training College, Crewe, who has taken his pupils to Llanberis annually for seven years. Those wishing to join the party should send their names immediately to Miss Wanstall,

County High School, Altrincham (and the fee of 10s. by July 3rd). Hotel accommodation at 45s. per week will be reserved. It is requested that when writing the preference either for the fortnight beginning July 28th or for that beginning August 18th should be indicated; the date will be chosen to suit a majority.

A THREE weeks' vacation course for students and teachers of French will be held at University College, London, next month. The course will include lectures on methods of language teaching by Mr. H. E. Palmer, lectures on phonetics by Mr. Daniel Jones, practical ear-training, and small classes for pronunciation exercises and fluency practice. Full particulars may be obtained from the secretary, University College, London, W.C.1.

THE twenty-first annual Conference of the Parents' National Educational Union will be held at Bedford College, Regent's Park, N.W.1, on Friday, July 6th. Among the subjects to be discussed are:—"The Physical Training of Young Children," Dr. Sophia Seekings; "Courage in Education: An Elementary School Experiment," Mrs. Clement Parsons; "The Parents' Union School in an Elementary School," W. Smith; "The P.U.S. in a Secondary School," Miss Gardner; "Stories for Little Children," Arthur Burrell; and "English Nursery Rhymes and their Tunes, Old and New," Martin Shaw.

UNDER the presidency of Mrs. Barnett, supported by a strong committee, a summer meeting is being arranged for the first time in London this year, and will be held in the Hampstead Garden Suburb from August 3rd to August 17th. It is thought that many people, and especially those belonging to the teaching profession, who cannot leave London for their usual holiday, will be glad to avail themselves of this opportunity for gaining mental and physical refreshment within easy reach of town. Among the subjects to be considered are all the main problems of reconstruction, whether religious, international, economic, or educational, and a strong section will deal with arts and crafts. Full particulars, including proposals for outings and relaxation, may be obtained from the secretary, Miss Bolden, the Institute, Hampstead Garden Suburb, N.W.4.

THE ninth annual meeting and conference of the Secondary Schools Association will be held at Caxton Hall, Westminster, on Thursday, July 19th, at 3 o'clock p.m. Sir Philip Magnus, Bart., M.P., will preside. The Master of Balliol College, Oxford, will deliver an address entitled "New Subjects in Education: (1) Natural Science, (2) History," to be followed by discussion.

THE Montessori Society is holding a vacation study circle from August 8th-21st in London this year, instead of a summer school in the country. The circle is limited to thirty members. Ten lectures will be given by experienced teachers holding the international Montessori diploma. There will be discussions and observation in the society's school, which has been established nearly two years. Application should be made to Dr. Jessie White, 49 Gordon Mansions, W.C.1.

THE Senate of the University of Jena has approved the following subject for a prize essay:—"Illustrate the accusation of hypocrisy and cant, as well as the type of the hypocrite, in English literature since the time of Elizabeth, and consider its historical and psychological basis." The *Frankfurter Zeitung* calls this an error of judgment, and asks what Jena would say if, for instance, Oxford set as a subject for a prize essay "German barbarism."

#### SCOTTISH.

LORD HALDANE'S address on "Reform in Education," at Aberdeen, was marked by the breadth of view and the sound common sense that distinguish all his utterances. At the outset he emphasised the fact that the key to the educational problem is in the hands of the nation at large. The universities and colleges may turn out experts, but unless the leaders of industry take advantage of their services the labour expended in their training is wasted. In every field of industry loss and waste are going on because employers of labour have not recognised the value of such experts as we have. He insisted that the true expert must be a man of broad general culture. The good man of science must know more than science, just as the good classic must know more than classics. The desire in some quarters to make teaching a branch of the Civil Service found in Lord Haldane, as in Mr. Fisher, an out-and-out opponent. He recognised that such a policy would give fixity of tenure and a reasonable income, but these would be more than counterbalanced by the restrictions on the liberty of members of the profession. He strongly advocated a system of devolution in administration and the closer connection of the universities with the training of teachers.

It is very gratifying to be able to record that representatives of the School Boards Association and of the three organisations of teachers have met in conference to consider the question of framing a salary scale for teachers. The School Boards Association has already recognised the inadequacy of the present salaries, and many of the members are sincerely anxious to arrive at a concordat that would be satisfactory to all parties. This will be no easy matter, for school boards must travel a long way if they are to satisfy even the most modest of teachers' claims. Still, the mere coming together for a common purpose is a great matter, and full of hope for the future.

A DEPUTATION from the three teachers' associations waited on the Secretary for Scotland to place before him their views on the allocation of the new education grant of half a million per annum. The chief points in their programme were (1) the establishment of a salary board; (2) the earmarking of at least 90 per cent. of the new grant for salaries; (3) the distribution of 75 per cent. of this earmarked sum as a *per capita* grant to all teachers, and the balance as a special grant to the more poorly paid teachers. The interview was held in private, but it is understood that a good deal of plain speaking was done by the members of the deputation in regard to the conditions and prospects in the profession generally. The Secretary for Scotland, Mr. Munro, in his reply, disclaimed all responsibility, so far as the Education Department was con-

cerned, for the present position. The fault, if there was, lay with the Legislature. So far as main contentions of the deputation were concerned indicated his general agreement with them, but pointed out the impossibility of making them operative under existing conditions. The deputation came away with the feeling that while they were not likely to get all that they asked for, the Secretary for Scotland would make a real effort to meet their wishes so far as circumstances permitted.

SIR EDWARD PARROTT, M.P., has not been long in office, but he is already showing his practical interest in his old profession. In the House of Commons, a few days after his election, he asked the Secretary for Scotland whether attention had been directed to the Departmental Committee which had been set up by the Board of Education for the purpose of inquiring into the principles which should determine the construction of scales of salaries in all classes of schools, and whether he would empower the Scottish Education Department to set up a similar committee for Scotland. The Secretary for Scotland replied that the matter was under consideration, but until they had wider areas of administrative control it would serve no practical purpose to institute committees.

SIR ALFRED EWING, Principal of Edinburgh University, formally opened the hostels erected by the Edinburgh Association for the Provision of Residences for Women Students. The plan makes provision for seven hostels, and already three have been opened. The scheme is financed jointly by the Carnegie Trust and the Edinburgh Provincial Committee for Training of Teachers. Sir Alfred Ewing said that all lovers of the University, and to all well-wishers of higher education in the country, the development of the side of university life represented by these hostels must be thoroughly welcome. To all the various students the advantage would accrue which came from association and common life during those eager and fruitful years of adolescence. Education was not merely, or largely, a matter of listening to lectures or poring over books and problems. It was mainly a matter of the contact of mind with mind. In Scotland they had always been proud of the fact that they had to cultivate the Muses on a little oatmeal, and even at the present price of oatmeal a university education was cheap; but on the social side the Scottish universities had not realised their possibilities. They had failed to see that the common life had a tremendous cultural value. The present buildings showed that the weakness in the university system was now recognisable, and they hoped for still further developments in the near future.

#### IRISH.

DURING the past month considerable activity has been shown by teachers and others interested in secondary schools in pressing the claims of Ireland to a proportional share of the grant which the Treasury is making under Mr. Fisher's proposals to secondary education in England and Wales. Important meetings have been held in Belfast, Dublin, and Cork, and memorials have been forwarded to the Chief Secretary pressing the needs of Ireland, but at present there has been no statement made by the Government.

to what it proposes to do. The amount due for secondary education was stated in last month's *SCHOOL* to be £100,000 per annum, and was arrived on the Goschen basis of 8s for England and Wales, 7s for Scotland, and 9s for Ireland. This basis has been adopted by the Schoolmasters' Association (Protestant) in a memorial to the Chief Secretary. The Catholic Headmasters' Association, however, makes its claim larger, basing it upon a statement by Mr. Ingham, when Chief Secretary, that the Goschen basis was unfair to Ireland, and that a population basis would be fairer. This would increase the claim £12,000.

The demand for this money naturally raises the question how it is to be spent, and as a reorganisation of the system of intermediate education is long overdue there has, naturally enough, arisen a desire for an immediate reform in this direction. This problem, however, has many difficulties, and if it is borne in mind that Mr. Fisher's chief aim is to improve the position of the teacher, care should be taken that payment of grant should not be postponed until the system is reformed. The Irish secondary-school teacher has an immediate and urgent claim for improved salary and status, and his position should be considered independently of a change of system. The following tables have been published after careful calculation. They show that in no case does the average salary reach the level of the minimum prescribed in the Government's schedule for the payment of the teachers' salaries grant, the minimum there being £100 for men and £110 for women. The average salary for all teachers, men and women, Catholic and Protestant, is £95; for all men teachers, £115, for all women teachers, £69; for all Catholic men teachers, £101; for all Catholic women teachers, £74; for all Protestant men teachers, £136, and for all Protestant women teachers, £67. The scheme of registration of intermediate teachers, which is practically complete, could well be used as a basis for increased salaries. Indeed, unless the salaries are improved, few will be found to qualify under the permanent regulations?

The Schoolmasters' Association urges in its memorandum that the money should be paid for augmenting the salaries on temporary conditions, and further suggests the outline of a scheme for the reorganisation of Irish secondary education. The *Irish Times* approves of this course of action, and also thinks the same might be accepted as a basis for discussion. It is under five heads:—(1) Irish education as a whole should be under a Minister of Education, with three departments under him, (a) primary, (b) secondary, and (c) technical (including commerce and agriculture); over each of these would be a permanent paid commissioner with an Advisory Board. On the Board of Secondary Education teachers should be represented. (2) Schools to be eligible for grants should be inspected and approved. (3) Grants to schools should be mainly on a capitation basis and sufficient to provide adequate salaries. (4) The present system of examinations should be replaced by a more elastic system, including provision for higher and lower leaving certificates. (5) Pensions should be provided.

THE Central Association of Irish Schoolmistresses has also held a conference of representatives of various organisations with a view to joint action in urging Ireland's need for more money and in discussing and formulating a scheme of reform by general agreement. This is a very desirable object, and would be most useful if it could be achieved.

A LECTURE was given on May 29th in Trinity College, Dublin, by Prof. Waterhouse on "The War and the Study of German." He commented on the absence of any definite policy in reference to the teaching of German, and urged the need in Ireland of the organisation of modern language studies. The attitude of Germany towards English and French compared most favourably with that of British universities towards German, although in recent years there had been some improvement. As regards schools, he pleaded earnestly for the retention and encouragement of German as contrasted with modern languages like Spanish and Russian, from the point of view both of culture and of commerce. He also argued strongly for English and Irish teachers of foreign languages, and against the importation of foreign teachers into schools and universities.

THE fourteenth annual congress of the Irish Technical Instruction Association was held at the Royal College of Science, Dublin, at the end of May and beginning of June, under the presidency of Sir Bertram Windle, F.R.S., University College, Cork. After a resolution in favour of increased grants for education, papers were read dealing with the prosecution of scientific research, the development of peat industries, the failure of the School Attendance Act of 1892, the teaching of citizenship, and compulsory attendance at technical schools.

#### WELSH.

THE resolutions of the Glamorgan County Teachers' Association, passed at the meeting on June 9th at Cardiff, are a typical example of the demands for educational change now being voiced in many and diverse quarters. They include free secondary education for all capable children, a single federal university with a technical side, abolition of all university fees, a faculty of education with a degree in the subject, federation of training colleges and their representation on the university council, the acceptance of the training course as a period of residence qualifying for the education degree, and, of course, proper treatment of teachers. It appears quite certain that some such scheme will have to be established as soon as an agreement can be reached on points of detail. The business community of South Wales is prepared generously to support the university, but claims a share in the management of it by way of direct representation on the council. This was clearly indicated at a recent meeting of the Cardiff Chamber of Commerce, when the president, Mr. T. E. Watson, was appointed to represent the chamber at the meetings called by the University College to arrange for the foundation of a department of commerce.

THE National Library has had two windfalls. Among the waste-paper collected by Boy Scouts were

found five valuable works in Welsh, six works printed at the Trevecca Press, and several other valuable books, including three valuable seventeenth-century books in English. Also an anonymous donor has put at the disposal of the library for the purchase of rare books and manuscripts the sum of £1,000 a year for the next five years. This is especially welcome, as Government grants for the purpose were stopped when the war broke out.

THE name of Alderman D. H. Williams, one of the members of the committee appointed to inquire into the question of scales of salaries for elementary-school teachers, is well known in Wales. Besides being an alderman of Glamorgan, he is the minister of Bethesda Welsh Congregational Church, Barry, chairman of the Glamorgan County Secondary Schools Committee, vice-chairman of the Central Welsh Board, and a member of several other bodies, one of which is the court of governors of Cardiff University College. He is a leading advocate of autonomy in Welsh educational matters.

## BOOKS FOR TEACHERS OF HISTORY.

(1) *Community: a Sociological Study.* By R. M. Maciver. xv+437 pp. (Macmillan.) 12s. net.

(2) *An Introduction to Political Philosophy.* By H. P. Farrell. viii+220 pp. (Longmans.) 3s. 6d. net.

(3) *Four Lectures on the Handling of Historical Material.* By L. F. R. Williams. x+86 pp. (Longmans.) 3s. net.

(4) *The Teaching of History and Scripture.* 66 pp. (Hodgson.) 2s.

(1) This is an extensive, original, and important study of the science of society from the pen of a Scottish philosopher, formerly of the University of Aberdeen, now associate-professor of politics in the University of Toronto. Though the book is only just published, the preface is dated "September, 1914," and it is evident that the whole work was written before the war, and in the atmosphere of international good will which existed in this country in the pacific years that preceded the great catastrophe. It emphasises the growing sense of inter-community which is destroying the barriers that separate nation from nation, and it asks whether, "in the light of the growth of this inter-community, war between civilised States is not becoming unintelligible to-day." Before this question was in type Germany had answered it in the negative.

The events of the past three years show that Dr. Maciver, when he wrote this book, took a too optimistic view of the growth of community among the various kindred peoples and tongues of the world. This fact, however, does not seriously detract from the value of the scientific examination to which he subjects current ideas of society, State, and voluntary associations. He is a strong opponent of the Neo-Hegelian doctrine of the omni-competence of the State, the leading exponent of which in this country is Prof. Bernard Bosanquet. Equally vigorously does he criticise the metaphysical superstition that the community is an organism. He analyses it as a structure framed by the human will, describes its essential institutions, and seeks to discover the laws of its development. The fundamental law of communal development, he concludes, is that "socialisation and individualisation are the two sides of a single process." He shows that the old conflict between "Man and the State," or society and the individual, is a mere logomachy, and

that neither can make real advance without the other with it.

There is a good deal that is controversial in work, and it will excite much opposition on the of State Socialists and others who tend to ideal community with political society; but it is so calm and scholarly a production that no serious student sociological theory can afford to neglect it.

(2) This little book challenges comparison with Frederick Pollock's well-known "Introduction to History of the Science of Politics," to which indeed is obviously much indebted. It is intended, however, for younger and less advanced students. Its purpose is to give a preliminary survey of political theory in historical development which may familiarise beginners in the subject with its leading features before they commence the more intensive study at the university. It is well adapted to perform this function, except in far as it is weakened by lack of proportion and incompleteness. Plato and Aristotle are grievously overdone; together they occupy nearly half the book. The Middle Ages are (as in Sir Frederick Pollock's work) grievously underdone. They are dismissed, the words of Lord Bryce, as "essentially unpolitical," and the writers of one thousand years are summarised in ten pages. There is nothing in either the text or bibliographical appendix to suggest that Mr. Farquharson has so much as heard of the works of Dr. A. Carlyle or Father Figgis. The sketch becomes inadequate when Hobbes is reached. Hobbes, Locke, and Rousseau are treated in detail in relation to their development of the social contract theory. Both Hobbes, however, and the contract theory are rather unfairly prejudged by the chapter headed "The Great Error in Political Philosophy." There is no reason to think that Hobbes believed that there was, or thought it necessary that there should be any historical basis for the theory. From the abstract point of view from which he regarded it—as a philosophical interpretation of current political phenomena—it contained, and still contains, a large measure of truth. The omissions in the later portion of the book are almost as remarkable as those in the middle part. Graham's "English Political Philosophy" and M'Cunn's "Six Radical Thinkers" seem to have been written in vain. But, is it credible? Not only M'Cunn's notable essay on Burke ignored; Burke himself is not so much as named from cover to cover. The value of this little book, the main idea of which is excellent, will be greatly enhanced if its dispositions can be adjusted and its more glaring omissions supplied.

(3) The author of these lectures is professor of modern Indian history in the University of Allahabad. The terms of his appointment include the obligation to issue publications, and accordingly the lectures form the first volume of a projected series which will presumably comprise works of research prepared by the professor and his pupils. It is therefore entirely appropriate that the inaugural volume should deal generally with the handling of historical material. The opening lecture treats of the different kinds of evidence which the historian can use, and bestows special attention upon the varieties of official documents. The second lecture is devoted to official documents—e.g. chronicles, memoirs, private papers. These two lectures are valuable introductions to research, and the only criticism that must be made respecting them is that they are applicable to research in Britain rather than in India. Lecture III. is general in its scope; it discusses "Pitfalls in the Work of the Historian" in a spirit similar to that of the well-known manual of Langlois and Seignobos. The final lecture is strictly irrelevant, though it is the most interesting of the four. Its subject is "Personality

History." The controversy between Carlyle and Buckle is not one which can be settled by any handling of historical material.

(4) This paper-covered pamphlet contains the report of a conference organised by the Women's International League last January. The two subjects of history and Scripture (not to mention education, citizenship, Thucydides and the Peloponnesian War, which also figure prominently) are mixed up together most incongruously. The reason for the selection of history and Scripture for joint consideration by the Women's International League appears to have been that in the opinion of this body both these subjects are commonly taught with a bias; the history is too patriotic, the Scripture not pacifist enough. These defects the Women's International League would remedy. In other words, the pamphlet is propagandist. Its deadliness is, however, mitigated by one or two good papers. Mr. G. P. Gooch, dealing with "Advanced History Teaching," lays down with admirable lucidity the four general principles that history must be taught (1) in its full length; (2) in its full breadth; (3) internationally; (4) impartially. Mr. D. C. Somervell, of Repton, who apparently found out too late what sort of a conference he was let in for, treats usefully from his own experience of "Methods in History Teaching." Miss Stawell writes well and enthusiastically on Thucydides; but what he has to do with the case the W.I.L. alone knows.

## PHONETICS IN THE SCHOOL.

(1) *A First Course of English Phonetics.* By H. E. Palmer. x+89 pp. (Hefter.) 2s. 6d. net.  
 (2) *The Pronunciation of English, Reduced to Rules by Means of a System of Marks Applied to the Ordinary Spelling.* By W. A. Craigie. 51 pp. (Clarendon Press.) 1s. 6d. net.

(1) MR. PALMER recently produced a useful set of exercises in phonetic transcription for fluency drill. The present volume consists in the main of exercises also, but of a simpler kind. After a brief introduction, in which the scope of the book is explained, comes a lucid answer to the question, "What is phonetics?" in five pages; its very brevity makes it, in some respects, superior to the pamphlet with the same title that Mr. Palmer wrote for the International Phonetic Association. The next section deals with the formation and classification of sounds, with particular reference to English sounds. This is generally very good, but some details call for criticism. Thus the terms "double vowels" (=diphthongs) and "double consonants" (=affricates) are not felicitous; it is better to use "double" when the same sound is repeated. Moreover, it is well to regard diphthongs as series of sounds, not as representing the juxtaposition of two sounds only. The remarks about "1" in the footnote on p. 9 are scarcely sufficient; initial "1" is often anything but "clear," as may be noticed in the common "English" pronunciation of French "la." The spelling (vocal) "cords" on p. 11 and in the diagram on p. 18 is a slip ("chords" appears elsewhere); "cords" rather suggests the strings of a violin, and it is much better to compare the vocal chords with the lips. It is a little surprising to read that the average English student finds it very difficult to produce trills; the uvular trill, indeed, gives trouble, but the tongue will be accomplished by many without effort. Does the English speaker normally push his lips forward when uttering the back vowels (p. 20)? The vowel of "bun" is much nearer to that of French "bonne" than to that of French "dame," if we consider the tongue position; English speakers of French not infrequently substitute this English sound in "bonne,"

"homme," etc. Part ii. consists of a valuable set of systematic articulation exercises, and part iii. of exercises on English words, viz. a catalogue of English sounds, each exemplified by twenty common words (mostly monosyllables) in phonetic transcription; six sets of words containing weak syllables; twenty-eight groups of pairs of words likely to be confused by foreign students of English on account of their similarity; and seventeen transcription exercises. Except in the case of "pure," "your," and "sure," no variants are mentioned. That "bad," "glad" are represented as having a long vowel is intelligible; but is the vowel in "bag," "flag" (here given as long) longer than that in "dog" (here given as short), or that in "man" longer than that in "lamb"? The words "coy," "coil," "cloy" might have been added to list 17; "steer," "leer" to list 18; "your," "sewer," "skewer" to list 21; and "ring," "rink," "sting," "stink" to list 77. For supplementing a course of lectures, especially in teaching foreign students, this little book will be found distinctly useful.

(2) This is by no means the first attempt to add marks to the present spelling in order to indicate the pronunciation. It has often been done in dictionaries; and in "Orntotype" the idea was utilised for the teaching of young children. In his introduction Prof. Craigie indicates that this book is meant for the foreign student; but it is by no means clear how it can serve him. He surely ought to learn the pronunciation at the very outset; but this is not a "First English Book" suitable for teaching foreigners. We are at a loss to determine to what practical purpose this book can be put, but, apart from this rather serious objection, we readily acknowledge that it is an ingenious piece of work. Those who learn the rules and are provided with texts marked in this way will have some guidance to the pronunciation of English. They will, it may be added, learn nothing about weak and strong forms, and by no means enough about the vowels in unstressed syllables, both matters of particular difficulty for the foreign student. The printing is careful, but not free from slips; and some of the pronunciations indicated (e.g. the long vowel in *stood*, *look*, *good*) suggest that Prof. Craigie's English has a northern flavour. The sentences for reading are at times a little quaint; thus § 20 ends with "Union is strength. A bunion on the toe."

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*Marguerite et ses Amis.* Par V. Louis. 105 pp. (Harrap.) 1s. 6d. net.—The author presents us with "a book dealing with the intimate life and doings of a little French girl." Each of the seventeen sections has a well-drawn picture containing many of the objects mentioned in the lesson. The text is brightly written, but the vocabulary is rather large (about 1,200 words to forty-eight pages of text in large print). Exercises for oral practice are provided, and there are passages for dictation from well-known writers, dealing with kindred subjects, in language which is usually rather too difficult for young learners. Four short scenes based on the text are given in an appendix.

Leo Tolstoy: *A Prisoner of the Caucasus.* 64 pp. (Oxford University Press.) 1s. net.—The Oxford Press is to be congratulated on its enterprise in issuing a series of "Russian Plain Texts" at a reasonable price and in a very clear type. The story itself is well worth reading, and presents no great difficulty to anyone provided with a good dictionary.

**Classics.**

*Caesar's Campaigns in Britain.* Edited by T. Rice Holmes. 160 pp. (Clarendon Press.) 1s. 6d.—This is a convenient compilation from the new edition of the "Gallic War" recently published in seven volumes by the Clarendon Press. Those seven volumes presented Dr. Holmes's splendid edition of the "Commentaries" in a form convenient for class-reading. This gives us now the continuous narrative from chaps. xx.-xxxviii. in Book IV. with the whole of Book V. in one volume. It contains also the vocabulary compiled by Mr. E. C. Loane previously published in separate form. The whole makes a very handy and complete school edition of a narrative likely to have a peculiar appeal to all boys just now.

*Livy.* Book XXIII. Edited by A. G. Peskett. xxiv + 159 pp. (Cambridge University Press.) 3s. net.—This is one of the "Pitt Press" series. To Livy's text (on which there is a ten-paged appendix, in which we have found nothing remarkable) Mr. Peskett has prefixed an adequate historical introduction, which we have read without enthusiasm, and appended some eighty pages of notes, which are not good. There is much—in fact, a great deal—which is unnecessary; whereas such things as *oportet* with the subjunctive (*e.g.* in chap. v., § 7) are passed over without comment. There is also some inconsistency of orthography.

**English.**

*Sir Walter Raleigh: Selections.* Edited by G. E. Hadow. 212 pp. (Clarendon Press.) 3s. 6d.—This scholarly memorial of one who was the soul of romance deals, so far as the extracts are concerned, with the prose only. The usual golden passages, with many less known, are transcribed, in the old spelling, and a few letters are added. In all we have the many-sided man from all points: "I have been a soldier, a sailor, and a courtier, which are courses of wickedness and vice!" he says of himself humorously; but how much more he might have added. Lover, poet, discoverer, almost demi-god to his day and generation, beside whom Sidney and Essex stand, pedestalled by time. "Time and Death call me awaye," wrote Raleigh; but none of them have gone. Miss Hadow's introduction brings the man quite near us, though for the explanation of the "charis" in him we have to go to longer works. It has an old-world flavour, and is a very fitting presentation of the English spirit. Notwithstanding Raleigh's imprudences, we see him higher far than the queen who like a Radigund punished him and the king who degraded even himself by Raleigh's execution. It is not too late yet for a modern dramatist to write his tragedy. The book contains illustrations and the Guiana map, and it appears to be the result of long and careful study of original documents.

*Sir Walter Raleigh: The Shepherd of the Ocean.* Edited by F. C. Hersey. 109 pp. (New York: The Macmillan Company.) 2s.—Here we have another volume, which takes full account of the verse and tries to present the man more for the younger student. The introduction is brief, but there are eight pertinent illustrations. Probably the ideal schoolbook on Raleigh would be one written on the lines of the "Poetry and Life Series," often reviewed in these columns. Verse, prose, and biography would be interwoven, and as large a space would be given to private letters as to the "History of the World." Everything would be in chronological order, and the man would be surrounded by his friends and enemies. For that we must wait. Meanwhile, here are two books, one quite suited for the highest classes and the other for

the middle classes of our schools, appearing at the right moment, when the world is at war for an idea, and when October 39th, 1618, is not too far away.

"Stab at thee he that will,  
No stab the soul can kill."

**History.**

*The Development of the British Empire.* By M. Prothero. viii + 91 pp. (Macmillan.) 1s.—Mr. Prothero, late of the Indian Educational Service, and an examiner in Indian history to the Civil Service Commissioners, has in this little book achieved the remarkable feat of telling the story of the expansion of England in about 20,000 words. He passes lightly over the beginnings of Empire in the sixteenth and seventeenth centuries. The eighteenth century, that marvellous age of overseas activity, receives, as is proper, fuller treatment, under the title, "Empire Extended by War." Developments of the nineteenth century, particularly the internal organisation of the self-governing Colonies, are next dealt with. Supplementary chapters, which somewhat break the chronological continuity of the scheme of the book, treat of the problem of India and of the question of future Imperial policy. The book is evidently the work of an author who has an intimate acquaintance with his theme, and especially with the Indian portion of it. By a slip of the pen on p. 37 (and again in the index) Gibbon Wakefield appears under the disguise of "Gibbert."

*History of Serbia.* By H. W. V. Temperley x + 359 pp. (Bell.) 1os. 6d. net.—This scholarly and impartial history of Serbia is exceedingly welcome at the present time. It is the fruit of studies and travel carried through during the period prior to the war. Hence it is written with an entire absence of the bias of belligerency, and it wisely concludes with the year 1910—*i.e.* before the formation of the Balkan League induced the existing political situation. The main purpose of the book is to describe and elucidate the struggle for Serbian independence in the nineteenth century and the subsequent developments of Serbian policy. In order, however, to attain his main purpose Mr. Temperley has felt it necessary to provide a short preliminary sketch of the whole course of Serbian history from the sixth century of the Christian era onward. The whole is thoroughly well done. Very rarely can one detect a doubtful statement or a slip. Could Basil II., however, rightly be described as "in extreme old age" (p. 32) when he was sixty-three? The Turkish occupation of Gallipoli is given (p. 78) as 1354; the date usually assigned is 1358. The reconciliation of Serbia with Byzantium is placed (p. 60) in 1274, when 1374 is obviously intended. The spelling of Serbian names is erratic. Thus Novakovic (p. 342) appears as Novakovich (p. 344). Similarly Mijatovic (p. 345) is Mijatovich (p. 342). These, however, are but minor blemishes on an important and able piece of historical investigation.

*Poland.* (1) *Intellectual Poland.* By Leon Litwinski. 64 pp. 6d. net. (2) *A Review of the British War-Literature on the Polish Problem.* 22 pp. No price. (Polish Information Committee, 110 St. Martin's Lane, W.C.)—The first of these pamphlets contains a lecture which M. Litwinski delivered in May of the present year before the University of Cambridge. It describes the conditions of intellectual life in Poland since the people lost their independence, portrays the vitality of Polish intellectual tendencies, and shows what educational organisation has been possible in recent years. A chronological appendix traces the history of the once-famous Polish universities.

The second pamphlet presents critical reviews of recent English works relating to Poland. Lord Eversley's "Partitions of Poland" meets, on the whole, with approval. Mr. Ernest Barker's "Submerged Nationalities" and Prof. Alison Phillips's "Poland" (in the "Home University Library") are subjected, however, to very severe condemnation. They do but embody, it is true, the views of Poland's weakness and anarchy which are commonly held by Western historians. These views are here said to be due to the distorting medium of the German spectacles through which Polish history has hitherto been regarded. That may be so; but we fear that it will be difficult to persuade even the sincerest friends and well-wishers of Poland in this country that the Poles were entirely free from all blame for the tragic fate which befell them in the eighteenth and nineteenth centuries.

*The American Indians.* By W. H. Miner. xii + 169 pp. (Cambridge University Press.) 3s. net.—As the aboriginal races of North America die out, scientific interest in them increases. Two hundred years ago the Red Indians were regarded by the white settlers merely as formidable rivals and social pests; now their submerged and scanty progeny are cherished as rare and valuable specimens of primitive fauna, and their habits and customs are studied by historical, ethnological, and anthropological societies almost as numerous as the tribes themselves. Mr. Miner, in this short but illuminating volume, summarises the results of a large mass of recent research into the origin and classification of the Indians, into their manners and mythology, and into the causes of their rapid decline. The conclusion to which he comes (p. 47) is painful: "In a list of the destroyers of the aborigines all but two—war and tuberculosis—may be said to have come from the white man." The catalogue of the contributions which European civilisation has made to the degradation and destruction of a once healthy and noble race makes very sad reading. Mr. Miner estimates that there were 1,500,000 Indians in North America in the days of Columbus. There are now 403,000.

### Geography.

*The Advanced Atlas of Physical and Political Geography.* By J. G. Bartholomew. 96 pp. of maps and diagrams. Index, 31 pp. (Oxford University Press.) 8s. 6d. net.—This atlas is a wonderful production considering its price. Each page is slightly larger than foolscap size, and Dr. Bartholomew has taken advantage of the size in two useful ways: first, important maps are shown larger than is usual in atlases of this standard; and, secondly, relief, vegetation, and climatic maps are frequently placed in a valuable juxtaposition. The quality of the work is well up to the high standard which will always be associated with the products of Messrs. John Bartholomew and Co. The maps are mounted on guards, and the atlas is eminently usable and durable.

### Chemistry.

*General Chemistry for Schools and Colleges.* By Prof. Alexander Smith. x + 662 pp. (Bell.) 6s. 6d. net.—The first edition of Prof. Smith's book was published in 1908, and deservedly secured a great measure of success, both in this country and America. The book has now been entirely re-written, and is undoubtedly improved. The earlier part has been considerably simplified, several difficult topics having been transferred to later chapters, the historical references have been expanded, and new sections on colloids, foods, explosives, water treatment, and many other subjects have been included. In most respects the

book deserves the highest praise. The exposition is admirably clear, the information is accurate and thoroughly up to date, and the terms used are carefully defined, thus encouraging precision of thought on the part of the student. Full use is made of the principles of what is usually known as physical chemistry, but is perhaps better termed general chemistry, whereby the reader is led to consider the factors which determine the direction and extent of chemical change, and the study of the subject thus becomes of high educational value. As regards the order of developing the subject, the introduction of atomic weights (p. 47) before equivalents are discussed (p. 65) appears open to some objection, but no doubt the author would be able to give reasons for this mode of procedure.

The only adverse criticism of importance we have to make regarding the book is that it contains a good deal which cannot be properly understood by a first, or even by a second, year's student. Thus there is a discussion of the cleansing action of soap, bringing in questions relating to adsorption, stability of emulsions, etc., and we are given the equation for the oxidation of indigo to indigo-white, and are informed that the formula for Congo-red is  $\text{Na}_2\text{C}_6\text{H}_5\text{N}_2\text{S}_2\text{O}_5$ . There is a danger that the student will "cram" such information without appreciating its significance, with unsatisfactory results from the educational point of view.

### Science and Technology.

*The Origin of the Earth.* By T. C. Chamberlin. xii + 271 pp. (University of Chicago Press, and Cambridge University Press.) 6s. net.—In this little volume Prof. Chamberlin presents a summary account of his theory of the origin of the solar system. The term "planetesimal hypothesis," by which the theory is usually designated, fails to indicate the essential difference between this theory and the nebular theory of Laplace, for planetesimals are scarcely to be distinguished from nebular matter, and, in any case, the rôle they play is not primary; but secondary. Briefly, Prof. Chamberlin's theory is as follows. He postulates the existence of a sun which becomes tidally distorted by reason of the near approach of another large mass. The tidal disturbances are so great that the sun is ruptured and matter is ejected, part of it in fairly dense aggregates, massive enough to retain gravitational control of themselves, and able to gather and hold in different degrees volatile as well as heavy matter, the rest, in a diffused condition, forming a species of nebula. The dense masses gradually sweep up the diffused matter, or planetesimals, and ultimately grow into the existing planets. It is seen that a nebula figures in both the old and new hypotheses, but while Laplace assumed the system to have been formed by a process of condensation of an original nebula towards the centre, Prof. Chamberlin explains the origin of the system by an explosion at the centre in consequence of which a nebula is formed. Laplace's theory has failed to stand the test of mathematical analysis, and it remains to be seen whether this will fare any better. Meanwhile, it promises well, having been carefully examined at every stage of its growth by Dr. Moulton, who may almost be considered its co-originator, while some very recent work by Mr. Jeans also supports it. The later chapters deal specially with the earth, and here Prof. Chamberlin is treading not only on somewhat firmer ground, but also with the surer step of a geologist in his own particular domain. Whatever be the ultimate fate of his speculations, the essentially tentative character of which he is the first to recognise, he has the merit of having given a new impulse and new direction to

the efforts to solve one of the most interesting problems which can occupy the human mind.

*Fungoid and Insect Pests of the Farm.* By F. R. Petherbridge. viii+174 pp. (Cambridge University Press.) 4s. net.—To farmers and market-gardeners this little book should prove of great value, since it will enable them to identify and treat a number of the commoner diseases to which their crops are subject. The book is divided into two parts, the first of which deals with such fungoid pests as potato disease, finger-and-toe disease of turnips, etc., mildews, ergot, rusts, and smuts. In each case the symptoms shown by the affected plant and the botanical nature of the fungus causing them are described and the remedy suggested. To describe structures and processes invisible to the naked eye in such a manner that they can be followed intelligently by readers unfamiliar with the microscope is no easy matter, but the author has performed his task with considerable success. The second part of the book is free from this difficulty, as it is concerned with obvious features and habits of insect pests. It contains clear descriptions of some of the commoner injurious species, and outlines of their life-histories, together with suggestions for their extirpation. The book is well illustrated and deserves a large circulation.

## EDUCATIONAL BOOKS PUBLISHED DURING MAY, 1917.

(Compiled from information provided by the publishers.)

### Modern Languages.

"Merkbuch of Everyday German Words and Phrases." By Basil Readman. 108 pp. (Blackie.) 2s. 6d. net.

"Graduated French Dictation." By Sydney H. Moore. x+168 pp. (Cambridge University Press.) 2s. 6d. net.

"Elementary Russian Reader." By Michael V. Trofimov. 64 pp. (Constable.) 2s.

Turgenev's "Pegasus," "Biryuk," "Forest and Steppe." Edited by Nevill Forbes and E. G. Underwood. (Oxford Russian Plain Texts.) 56 pp. (Clarendon Press.) 1s. net.

De Vigny's "Laurette"; Mérimeé's "Mateo Falcone," "Le Coup de Pistolet"; Daudet's "Le Chèvre de M. Seguin," and three other tales; Nodier's "Le Chien de Brisquet," and two other tales. Edited by H. L. Hutton. (Oxford French Plain Texts.) (Clarendon Press.) 6d. net each.

"La Fille de Carilès." By Madame Colomb. Edited by C. R. Ash. (Oxford Junior French Series.) 96 pp. (Clarendon Press.) 1s. net.

Scribe and Legouvé: "Adrienne Leccourreur." Edited by T. E. Hamilton. (Oxford French Series, by American Scholars.) xx+200 pp. (Oxford University Press.) 3s. net.

G. Sand: "Le Marquis de Villemer." Edited by C. E. Young. (Oxford French Series, by American Scholars.) iv+222 pp. (Oxford University Press.) 5s. net.

"Elementary Spanish-American Reader." Edited, with exercises, notes, and vocabulary, by F. B. Luquiens. xii+224 pp. (Macmillan.) 4s. net.

"Elementary French Exercises." By the Rev. B. V. F. Brackenbury. xii+120 pp. (Macmillan.) 1s. 6d.

"One Hundred Russian Verbs in Common Use." 146 pp. (Simpkin.) 2s. 6d. net.

### Classics.

"M. Annaei Lucani De Bello Civili." Liber VII. Edited by J. P. Postgate. cxii+146 pp. (Cambridge University Press.) 3s. net.

### English: Grammar, Composition, Literature.

"A Selection from the 'Meditations of the Emperor Marcus Aurelius Antoninus.'" Translated from the Greek and annotated by J. G. Jennings. 132 pp. (Blackie.) 2s.

Shakespeare: "King Henry V." Edited by J. H. Lobban. (The Granta Shakespeare.) xx+192 pp. (Cambridge University Press.) 1s. net.

"Short Essays for Schools." Selected by S. E. Winbolt. 202 pp. (Clarendon Press.) 2s. 6d. net.

"Stories in Verse." Selected by V. H. Collins. 176 pp. (Clarendon Press.) 1s. 6d.

"A Skeleton Outline of Old English Accidence." Reprinted from selections from the Old English Bede. By Prof. W. J. Seligfield. (Manchester University Publications.) (Longmans.) 1s. 3d. net.

"The Tudor Shakespeare." Edited by Dr. W. A. Neilson and Dr. A. H. Thorndike. 39 vols. (Macmillan.) Increased from 1s. net per vol. to 1s. 3d. net per vol.

"Macmillan's Series of Pocket American and English Classics, edited for Schools, with Introductions, Notes, etc." (Macmillan.) Increased from 1s. net per vol. to 1s. 3d. net per vol.

Johnson: "Life of Pope." Edited by A. R. Weekes. xxii+154 pp. (University Tutorial Press.) 2s.

### History.

"Notes on European History for Army Candidates." By D. L. Lipson. (Blackie.) 1s. net.

"The Expansion of Europe." By Prof. Ramsay Muir. 243 pp. (Constable.) 6s. net.

"Pages of Britain's Story, A.D. 597-1898." By J. Turrall. 326 pp. (Clarendon Press.) 2s. 6d. net.

### Geography.

"Advanced Atlas of Physical and Political Geography: a New Series of Maps specially Designed for Schools, Colleges, and Private Students." By J. G. Bartholomew. 128 pp. (Oxford University Press.) 8s. 6d. net.

### Science and Technology.

"The Italian Orders of Architecture: A Practical Book for the Use of Architects and Craftsmen." By Prof. C. Gourlay. 64 pp., with 32 plates. (Arnold.) 6s. net.

"A Text-book of Sound for Advanced Students." By Prof. Atul Chandra Datta. 184 pp. (Blackie.)

"A Manual of Field Astronomy." By A. H. Holt. 138 pp. (Chapman and Hall.) 6s. net.

"Mechanical Equipment of Buildings." Vol i. "Heating and Ventilation." By L. A. Harding and A. C. Willard. 615 pp. (Chapman and Hall.) 18s. 6d. net.

"Design of Railway Location." By C. C. Williams. 517 pp. (Chapman and Hall.) 16s. 6d. net.

"The Range of Searchlight Projectors." By Jean Rey. Authorised translation from the French by J. H. Johnson. 152 pp. (Constable.) 12s. 6d. net.

"The Design of Marine Engines and Auxiliaries." By Prof. E. M. Bragg. 190 pp. (Constable.) 12s. 6d. net.

"Text-Book of Motor-Car Engineering." Vol ii. "Design." By A. Graham Clark. 300 pp. (Constable.) 8s. 6d. net.

"Practical Surveying." By E. McCullough. (Constable.) 8s. 6d. net.

*Chemical Calculations.*" By Dr. R. H. Ashley. pp. (Constable.) 8s. 6d. net.

*Essentials of Electrical Engineering.*" By J. Fayson. 345 pp. (Constable.) 10s. 6d. net.

*Bird Life throughout the Year.*" By J. H. Salter. edition. 256 pp. (Headley Bros.) 5s. net.

*Elementary Science for Engineering Apprentices.*" By W. McBretney. (Longmans.) 1s. "Tuberculosis." By Dr. Clive Riviere. (Methuen.) 1s. net.

*British Insects and How to Know Them.*" By S. Bastin. (Methuen.) 1s. 6d. net.

*British Ferns and How to Know Them.*" By S. and S. Bastin. (Methuen.) 1s. 6d. net.

*Housecraft Science.*" E. D. Griffiths. (Methuen.) 1d. net.

*Advanced Text-Book of Magnetism and Electricity.*" By R. W. Hutchinson. In two vols. Vol. i., vii-xii pp. Vol. ii., vi+468+xii pp. (University of London Press.) 8s. 6d.

### Art.

*History and Methods of Ancient and Modern Art.*" Vol. ii. By J. Ward. 306 pp. (Chapman and Hall.) 9s. net.

*The City Churches: A Short Guide, with Map and Directions.*" By Margaret Tabor. 134 pp. (Headley Bros.) 2s. 6d. net.

### Miscellaneous.

*On the Friendship of Books.*" By W. H. Hudson. (Harrap.) Paper, 6d. net; yapp, 2s. 6d. net.

*Treasure Mountain.*" By Edwin L. Sabin. 288 pp. (yapp.) 3s. 6d. net.

*Hero Tales and Legends of the Serbians.*" By Gav M. Petrovitch. 400 pp. (Harrap.) 8s. 6d.

*Stories for the History Hour.*" By Nannie Nieberg. 254 pp. (Harrap.) 3s. net.

*The Dedicated Life.*" By the Rev. the Hon. and Lyttelton. (Longmans.) 1s. net.

*World-Builders All.*" By the Rev. E. A. Burtt. (Longmans.) 2s. net.

*Wall Pictures of Farm Animals.*" Six subjects. Painted. (Macmillan.) Reduced from 3s. each to 1s. each.

*Additional Exercises on the Rapid Course of Pitman's Shorthand.*" 59 pp. (Pitman.) 8d.

*A Manual of Duplicating Methods.*" By W. Desborough. 90 pp. (Pitman.) 2s. net.

*How to Do Business with Russia.*" By C. E. W. Stevens and W. Barnes Stevens. 200 pp. (Pitman.) 2s.

an impossibly long schoolday and Pantagruel's capacity for work to carry out the programme.

The demands of Science are not likely to be overlooked for want of insistent advocacy. The Classical Association wishes to see the number of those taking a second foreign language much increased, and urges that the second foreign language should always be Latin. Mr. Clarke wants French at eleven, Latin at twelve, Greek or German at thirteen; with the intensive teaching which is rightly demanded during the first two years this means, for foreign languages alone, five periods at eleven, ten at twelve, and fourteen at thirteen. All these reformers have my sympathies—but so has the child.

The new examination schemes based on the circulars of the Board of Education require proficiency in certain groups of subjects. Here there is undoubtedly some latitude; but there is a real danger lest the specialist zealots insist on compulsion to take this or that subject. They have always had their eye on examinations as a convenient means of influencing school curricula. Everyone knows of the comic compromise of "Latin or a Science" in the London Matriculation regulations, and of the unconsciously prolonged agony of compulsory Greek at the older universities.

Teachers have grown so accustomed to this kind of thing that they seem to accept it as inevitable and not to realise how much it interferes with their freedom. Examination regulations are hard-and-fast things, which often hamper initiative and experiment. Is it heresy to say that the suitability of a curriculum should be ascertained by inspection, and that it is not the function of examinations to determine what subjects a boy or girl should learn? It is fundamentally unsound to force a subject into the curriculum by means of examination regulations, instead of letting its inclusion or omission, or the degree to which it shall be studied, be determined by the teachers in friendly consultation with the inspectors. Even when a subject forms part of the curriculum the head of the school should still be free to decide whether any particular pupil should be examined in that subject.

A certificate showing that a boy or girl had for a certain period attended a school (of which the curriculum was approved by the inspectors of the examining body) to the satisfaction of his teachers, that he or she was able to speak and write English clearly and to perform ordinary arithmetical computations accurately and quickly, and that he or she had reached a recognised standard in at least four approved subjects, tested by the examining body—such a certificate would soon be recognised as affording adequate guarantees of a good general education. It would naturally be to the advantage of the candidate to offer subjects for examination the mention of which in his certificate would serve him in his career, but the only compulsory subjects should be English composition, reading aloud, and arithmetic.

An earnest attempt is being made to shake off the incubus of multiple examinations, but the old idea of the examination as *directing*, not as *testing*, education persists. It was a natural idea before the introduction of inspection in secondary schools, but compulsion by examination regulations is a mechanical and soulless device, which enlightened opinion cannot esteem so highly as the sympathetic relations between competent inspectors and teachers.

(It is time we started a scheme for the probationary training of inspectors, and though we have been examining so much and so long, there is still room for research in methods of examining. A good deal of examining at present is of dangerously poor quality.)

WALTER RIPMAN.

**Advanced Courses in Secondary Schools.**

THERE is one part of the Regulations for Secondary Schools, newly issued by the Board of Education, which seems to call for criticism. I refer to the section on advanced courses. It is there suggested that these courses should be formed in connection with three groups of subjects—science and mathematics, classics, and modern studies—and should be taken by pupils between the ages of sixteen and eighteen. There is nothing particularly revolutionary about this in itself, but in the course of the notes on this proposal it is stated that in most schools it will only be found possible to form advanced courses in one of the three groups of subjects. The idea apparently is that, after passing some examination of an average matriculation standard, at about the age of sixteen, pupils who show signs of being able to work for an honours degree should be encouraged to enter upon an advanced course in that group of subjects for which they show most taste, and that a school which specialises, say, in science and mathematics should pass on its best pupils in classics and modern studies to other schools, under the same, or neighbouring, education authorities.

It is the latter part of this proposal which, as it seems to me, would have very disastrous effects upon both the pupils and the schools concerned. As my own experience has been confined almost entirely to girls' schools, in what follows I refer only to them.

With regard to the pupils themselves, many of the ablest at one of the most formative periods of their development—the passage from school to university life—would be deprived of the help and sympathy of a headmistress whom they had known for years and placed under the care of an entire stranger. Apart from the personal element, the mere change of school at about the age of sixteen or seventeen would be a disaster. The value to a girl of her one or two years in the Sixth Form is, or should be, as much moral as intellectual. The development of *esprit de corps* and the sense of responsibility is at least as important as high scholarship, but how could a girl feel responsible for, or even deeply attached to, a school of which she was ignorant until she was sixteen, and which she is to leave in two years? What would be thought of a proposal to send all mathematics and modern studies boys at Eton to Harrow or Rugby for the last two years of school life, while Eton received in return—and into its Sixth Form—all classics boys from these schools?

There is another point. There would be a constant temptation to girls to specialise, and to teachers to urge them to do so, not in the subjects in which they could do their best work, but in the one in which their own school specialised.

With regard to the schools, the dangers are just as obvious. No headmistress could regard with equanimity the prospect of losing a considerable proportion of her best Fifth Form girls, just at the time when she would naturally be looking forward to having their help as Sixth Form prefects. Such a loss would make school discipline infinitely more difficult, while the effects of a corresponding influx of strangers into the Sixth Form, without any knowledge of, or pride in, the school tradition, would be even worse.

The fact, too, that of the best pupils only those who did well in one particular branch could be retained to the end of their school career would have a very depressing effect on the teaching in other branches. It would be difficult to get thoroughly good teachers of subjects lying outside the particular group in which the school specialised, so that girls whose tastes lay in other directions would not have a fair chance.

I would therefore suggest that the note in the regulations on these advanced courses should be altered and that schools should be advised not to form advanced courses at all unless they can do so in at least two of the three groups.

It is very much to be hoped that teachers will let their voices heard on these proposed courses as quickly as possible, since, once staffs have been engaged and grants paid in connection with them, alteration will be much more difficult.

M. E. T.

**Prose Repetition.**

WHILE thanking you for a kindly notice of my "First Book of English Prose," may I say that I am not "at last" a convert to the practice of prose repetition, but have supported it by precept and example for many years, and further, that in my "Book of English Prose" (Macmillan, 1911) I tried to produce an anthology on just such a scale as your reviewer suggests. My object in the smaller book, however, has not been to make a collection of famous pieces, but on a selection of passages of beautiful English prose which should at the same time be easily within the power of young learners to understand and enjoy.

J. H. FOWLER

THE words "at last" did not refer to any conversion of Mr. Fowler, but to the reviewer's pleasure in thinking that Mr. Fowler was on the side of the angels. There is nothing, so far as I can see, in the slight prefatory matter to show that the passages are not to be viewed as purple. Anything that Mr. Fowler writes or edits is sure of respect; but, not having seen the "Book of English Prose," to which he refers before me, it is impossible to say whether a planned anthology for repetition (an English *Ediscendae*) has yet been put together. My contention is rather that it appears to be early for writers and readers to attempt such passages, and this is due to the fact that prose has not been committed to memory as verse is for which, in my opinion, schoolmasters are mainly to blame. Probably Mr. Fowler would agree in this. Discussion of this important matter is otiose; memorising of prose and of great prose reacts on the position, conversation, letter-writing, and incidentally on the finer issues of life.

THE REVIEWER

**The School World.**

**A Monthly Magazine of Educational Work and Progress.**

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# The School World

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AUGUST, 1917.

SIXPENCE.

## CITIZENS-TO-BE.

By C. E. SHELLY, M.A., M.D., etc.

THE shadow of every ill is cast by some radiance beyond it; and among those compensations which future generations will trace to the most destructive war that history has known, not the least will be found in the results of a deeper and more practical realization of the full importance of the child as the great asset of the State. With so heavy a toll of life in its prime, in view of the great and continuous wastage of human energy and talent, it was inevitable that the nation should be compelled to take stock of the material by which alone this huge depletion of vital capital could be made good. It was inevitable that it should be stirred, as never before, by the high and preventable death-rate obtaining during the earlier years of life. Had it not been moved to seek preventives as well as antidotes to such evils, and to set itself to consider whether more—and much more—could not be done towards making the very best possible of every young life contributed to its population. Babies born with a healthy heritage: infants saved from preventable illness and needless death: children reared amid healthy surroundings—cared for and so educated as to be developed into healthy citizens, physically sound and intellectually capable: these are not merely ideals, they are the necessities of the problem which confronts us—as serious a one as any which the nation has yet been called upon to face. But its satisfactory solution would result in benefits so great and so far-reaching as to commend it—if only for merely selfish reasons—to everyone.

Rightly beginning at the beginning, the promoters of "Baby-Week" aimed at bringing before the public the special value of infant life and the prime importance of antenatal care, as a precedent factor necessary to

the successful and healthy rearing of the nursling. But infancy, childhood, and adolescence, though convenient terms, are to some extent arbitrary and artificial in their distinctive significance. Considered from the point of view of health, we see certain essentials common to them all. Food, warmth, sleep, a healthy environment: these are requisite to the successful upbringing of the young animal at all ages. In the case of the infant, attention to the physical care of the individual is all-important. And, though the need for moral and intellectual training becomes an increasingly important addition to the problem as the age of the individual advances, physical development never recedes into the background of the perfect educational system. Good moral and intellectual development is attained more easily in the case of the healthy child; and the two sides of the dual human personality must be cultivated together, and equally careful supervision must be given to each, if the best results are to be secured.

When the school age is reached a very heavy share of the originally parental responsibility devolves upon the teacher. It is his duty to make the best of the immature material supplied to him so that it may be guided, trained, developed into useful members of the community. He is not concerned merely with the moral and intellectual education of the child; for, as we have seen, these sides of its personality are indissolubly interwoven with the physical, and any system of training which aims at the full development of the individual's capacity must give continuous attention to all of them. The wisdom or the follies of parents, the conditions prevailing in the child's home, its moral atmosphere, and the quality of its surroundings will already have made their mark. There will be need to counteract some influences, to correct incipient distortions from the right course, to awaken and foster some capacities hitherto overlooked and neg-

lected. And in relation to all this the child must always be regarded as a triplicate whole. Body, mind, and soul each need sustenance, the warmth of sympathetic understanding and encouragement, the healthy atmosphere of cleanly living, the energising stimulus of active exercise—within the growing capacity of the individual. And, in relation to each and all of these important things, it is as an individual entity that each child must be considered. Successful and real education does not deal with children "in the lump" only, but recognises that no two children are precisely alike in any respect. This power of differentiation at its best is the gift of the born teacher; but every man and woman who loves the work and throws his or her powers into it with whole-hearted energy can acquire something of this faculty. Once attained to any degree, it will be found to smooth many difficulties and to prevent many disappointments.

The physical condition of the child will first receive attention; and it must never be forgotten how important a factor this is in regard to the due development of its capacity in other directions. Here, as always, it must be remembered that the "average child" (and all the statistics that pertain to it) exists only on paper. Each child is really a variant, though its own personal characteristics may be quite healthy and normal; and it is the sum of these variants which forms the total from which the averages of height, weight, intelligence, etc., are deduced.

As regards physical development, it was shown by Mr. Cecil Hawkins's elaborate statistics published some years since that the average heights and weights assigned to children at different ages may be quite misleading if applied, as a standard, to the individual child. For, while some children grow rapidly during the earlier years of life and then at a progressively slower rate until their full stature is attained, others grow slowly until about the age of puberty, then very quickly for a few years, after which the curve falls somewhat steeply. Others, again, gain height at a slow and steady rate well beyond mid-adolescence, and finish with a spurt of very rapid growth for a few years up to nineteen or twenty. In another group of equally healthy children, the rate of growth approximates more or less to the figures of the "average" individual. The relationship of height and weight is of more value; but this may vary within wide limits from "the average" without its being attended by any deterioration of health. A good general working rule is that which regards the child whose appetite, digestion, and sleep are

normal, and whose weight continues to go up as a healthy one although its height and weight, for the time being, may be far from conforming to the "standard."

It is scarcely too much to say that the most important matter in connection with the child's physical well-being, present and future, is the habit of efficient mastication. There is probably no one thing which is so largely responsible for illness (often insidious and long-deferred) and inefficiency as the habit of imperfect mastication. It is a fault which begins in the earliest nursery days, but it is not incapable of correction during early school life—provided that the co-operation of the parents can be secured. If all food—and the soft food especially—are thoroughly chewed before being swallowed there would be practically no cases of appendicitis. That is too long a story to be detailed here, though it is as simple a list of sequences as the alphabet, and as interesting in the beautiful dovetailing of all the various digestive processes as the greatest romance yet written.

What is true of the wide variations in the rate of growth and development among healthy children is equally true as regards their mental development. In other words, abnormalities (as gauged by the "average") are normal to a certain number, without this delayed development of later capacity being any indication of mental deficiency. We all recognise this fact in the abstract, but some instances of it are remarkable and instructive: Sir Isaac Newton was regarded as a dunce until after the age of eighteen. Charles Reade did not write his first novel until after he was forty. Roderick Murchison retired from the Army as peace seemed to be assured, and led for many years the relatively aimless existence of the country gentleman of his day—with no hobby and no special interest in life. One afternoon he struck his foot against an upstanding stone in the roadway. Without any particular intention, he picked up the stone, carried it home, and began to examine it—with the result that another name became added to the list of the world's famous geologists. This in an age when young ladies in fashionable boarding schools were being taught everything that was deemed worth knowing about all the sciences from astronomy to zoology by means of a quaint volume arranged after the fashion of the Catechism. This erudite instructor asks, in red ink, "How are stones formed"? and replies, in black ink, "Stones are formed by concretion in the bowels of the earth."

The names just mentioned illustrate rather

reme examples of the late development of latent talents. But the same delay in the rousing of dormant intellectual powers may be observed in any body of school children. The relatively precocious child, the "bright" and "clever" pupil, runs an obvious risk of being "speeded up" because he responds so readily to the spur. Whether the results thus achieved are ultimately to his real advantage is at least questionable. As a rule, the world at large would be better if the physical side of his life received more attention, while his mental activities were restrained within reasonable limits. The after-history of the preparatory-school boys who succeed in winning scholarships at a senior school is not altogether encouraging; and some wise masters of preparatory schools flatly refuse to receive any boy whose parents wish him to be trained for a scholarship examination, believing that such a forcing of the immature brain is unfair to its owner and discouraging to the steady and conscientious worker whom, for the time being at all events, leaves behind. As an equipment for life, wisdom is worth more than learning: the beacon fire is more useful—and more enduring—than the meteoric flight of a rocket. But the child exhibits any particular aptitude or talents should be noted and his special capacity encouraged. We are far from advocating the production of a crowd of amateur pseudospecialists; but the obviously square peg ought to be saved from being jammed into a round hole for the rest of his life, and vice versa. The world will always have need for those who are able to do some kind of work particularly well, just as it will always depend for its stability upon those who, though not exhibiting a special or outstanding capacity for anything in particular, may nonetheless be regarded as likely to swell the ranks of good and trustworthy citizens.

It must therefore be one of the teacher's duties to discriminate with these objects in view. And upon him must always fall the task of inculcating the observance of discipline for its own sake as a duty and an advantage to the individual himself as well as to his fellows—but without undue repression of the child's individuality. Undoubtedly one of the greatest aids in this direction is provided by military drill. Its essence is actuality and instant obedience to the word of command. At the same time it favours a good carriage and a healthy development, while familiarising the individual with action co-ordinated with his fellows. None the less, sagacious appreciation should be accorded to what a modern educationist has described as "that valuable spirit of lawlessness

which is an essential ingredient in the composition of every child." This is, indeed, for the most part, only the spirit of freedom in rebellion against restrictions which are not yet comprehended. It is the spirit which inspires all reformers and which helps to make each succeeding generation wiser and more humane than its predecessors. But for it, all old evil customs and hoary abuses would still be with us—accepted because of long usage and familiarity; and we should still be burning witches and condemning every horse-thief to capital punishment.

It is obvious that a very great deal will be demanded of school teachers in the near future, for they will be called upon to bear a large part of the burden involved in reconstructing the nation. Their work should be more interesting, and it will demand even greater aptitude than heretofore. It should secure proportionate recognition and remuneration. Few only of the present members of the profession will live to see the full result of "the new education." For, though a new heaven and a new earth may be decreed, they cannot be created by a stroke of the pen. But they will have played their part in laying soundly the foundations of a magnificent enterprise—one which will depend for its success upon, literally, the heart and the soul of the whole nation as well as upon its purse. For it is certain that no undertaking of such a nature and of such magnitude can be carried to success without very considerable expenditure. Yet no one in his senses will question that, viewed merely as a measure of State insurance, all money devoted to such an object will prove the soundest and most remunerative of investments.

#### ADVANCED COURSES OF INSTRUCTION IN SECONDARY SCHOOLS.

By Prof. WALTER RIPMAN, M.A.

IT is justifiable to regard the work achieved, since 1902, in secondary-school education with much satisfaction. It is true, there is still much difference in the degree of efficiency attained, and we are conscious of certain weaknesses; but it is far better to see clearly how much remains to be done than to remain contentedly stagnant. No small share of the progress made is due to the Board of Education, and our appreciation should be expressed in no niggardly spirit. The Board, we may be sure, recognises that, if there are weaknesses in the schools, it is also itself not infallible; and it has shown repeatedly that it is in a sufficiently healthy state not to resent criticism or to reject suggestions without consideration.

The secondary schools receiving grants from the Board have steadily increased in number and in average efficiency; they are now an educational asset of first-rate importance. The regulations of the Board for these schools carry weight far beyond the sphere to which they directly apply. In so far as these regulations concern pupils of from twelve to sixteen years of age, they have been fully discussed, particularly since the issue of Circular 849. This laid down the principle that two examinations should be conducted in secondary schools. The nature of the earlier of these, commonly designated the General School Examination, was indicated at some length. Only one paragraph was given to the "Second Examination," in which reference was, however, made to the Board's Memorandum on Curricula in Secondary Schools. Little attention was devoted to this examination in the discussion of the circular. Circular 993 made no reference to it in enumerating the "five main points" on which "attention had been specially concentrated" in the "criticisms and suggestions" received by the Board.

For a time, the desired reform of examinations was stopped by the war. It took, indeed, a long while before the nation realised that even (or rather especially) in war time it was worth while to spend money on education. Then, with almost startling suddenness, the money was forthcoming; money not only for elementary schools, but for the secondary as well; not only for the raising of salaries, but also for advanced courses of instruction. As a result, we have new regulations; this time, however, without "criticisms and suggestions" being invited or received.

Now there are some who wonder whether it was either necessary or desirable to proceed in such a drastic manner, and whether preliminary discussion would not have done some good. It may be replied that such discussion has been possible ever since the Memorandum on Curricula appeared in 1913. That is quite true; but while the provision of advanced courses was merely a pious hope, the discussion would have lacked reality; and anyhow, there was none, or scarcely any. But now the Board has acted, and we are in duty bound to consider whether that action is likely to have the desired result.

A few great, old-established schools will be able to provide at once the three courses sanctioned which—it is worth observing—are no longer described as in the Memorandum on Curricula. There they appear as:—

"(1) Classics, including ancient history and the Greek Testament.

"(2) Science and mathematics.  
"(3) Modern humanistic studies."  
This has now been changed to:—  
"(1) Science and mathematics.  
"(2) Classics: the Latin and Greek languages, literature and history.<sup>1</sup>  
"(3) Modern studies: two languages other than English, of which Latin may be one, with their literature, and modern history, including the history of England and Great Britain."

But it surely is not primarily for a handful of thriving schools that the new grants intended. It is rather for the majority of schools that have arisen or been renewed since 1902. These have had occasional pupils; some have had quite a fair number—done post-matriculation work. It has been carried on under difficulties.<sup>2</sup> It has often meant something like private coaching, with considerable sacrifices on the part of special teachers. Some very fine—we may say notable—work has been done in this way. Until 1914 the leaving age had been rising, parents had been educated into seeing that it was good for their children to stay on and receive some "advanced instruction" in our secondary schools. The tops of our schools were growing, steadily if not rapidly. Then the war came, and owing to the great demand for clerical and other work, and the often excessive salaries offered, the average leaving age has temporarily been lowered. Conditions are manifestly abnormal; yet this is the time chosen for launching a scheme which must have far-reaching consequences.

It may—for four hundred pounds a year—a big temptation, and it may lead to our secondary schools being allowed by the Board of Education to take up one or other of the proposed courses. One or other: there is the grave danger.

A school is called upon to decide whether it will offer a course of advanced instruction in classics, or in science and mathematics, or in "modern studies." In doing so, it has to take into account its present staff, which, if it be a boys' school, is almost certainly abnormal, and will remain abnormal for some years to come. It is to decide whether it is to become a science school, or a classic school.

<sup>1</sup> It will not escape notice that science and classics have changed places, so that there may be no jealousy. But "modern studies," of course, is the last place; it is always so.

<sup>2</sup> The italics are mine. I deal with Latin as a "modern study" in another part of this article.

<sup>3</sup> One of these difficulties is that there has been no examination based on a course of study planned by the school and having a recognised standard. External Intermediate Examinations were never intended as tests of school work, and in many ways impose undesirable restrictions without affording any advantage to those who become internal students of a university or leaving school. The fact that at secondary schools many candidates have been prepared with success for such examinations is no evidence that these examinations are ideal for schools.

chool, or a "modern" school; for that is going to be the result.

Let us assume that it is to be a science school; in most cases this will be the easiest course to arrange. Is it not inevitable that parents who want their children to study science will send them to such a school? that the whole of the school work will be subtly influenced? that a pupil showing promise in several studies will be diverted to the study of science? And will not the staff be affected in similar way? What first-rate teacher of classics or modern languages will apply for an appointment at such a school when he knows that there is no higher work in his subject, that pupils of linguistic as well as scientific gifts (they are not at all rare) will be compelled by the bias of the school to take up science rather than languages? These advanced courses are the tail that is going to wag the whole body.<sup>4</sup>

I have nothing but admiration for the teachers of science. I consider the study of science, rightly carried on, as of supreme importance. Yet I view with genuine apprehension a return of the days when tools were induced to specialise in science because in this way a higher grant could be obtained.

It really looks as if we were to be driven to the German system of secondary schools which would be a curious result of the war. The classical and scientific-mathematical schools would correspond to the "Humanistisches Gymnasium" and the "Oberrealgymnasium"; and to make the resemblance complete, we have—as the counterpart of the "Realgymnasium"—a school with "modern studies," viz. "two languages other than English, of which Latin may be one."

As a modern language teacher, I should like to dwell particularly on this new feature—the "modern studies" course. According to the Memorandum on Curricula, the Board of Education in 1913 was of opinion that the use of "modern humanistic studies" could include:—

"(a) A thorough and advanced study of two modern languages other than English;  
"(b) Work in history, European as well as English, of a kind more advanced than that done in the middle of the school, and involving the study not only of school text-books, but of fuller and more authoritative historical works;"

<sup>4</sup> As will appear from a subsequent section of this article, the Sixth Form, when the advanced work is done, will be so constituted that it cannot fail to be in organic connection with the corporate life of the school; it will be an appendage, and may therefore fitly be described as "a tail—and an artificial tail at that! But it will do the wagging all the

"(c) The close and systematic study of selected English classics in prose and verse, and of a book or books, whether English or foreign, which may give a training in close and exact reasoning."

Now this was quite a good programme—for an honours course at a university, if "thorough and advanced" meant anything at all. It was an extremely ambitious scheme for two years of school work, and represented about twice as much work as would be expected of a classical student.<sup>5</sup> I have no idea who was responsible for this section of the Memorandum on Curricula; but I suspect it was some classical scholar who was anxious to save us modern language teachers from the danger of having a "soft option." Classical scholars show a touching concern for us in that way. They similarly are careful to see that we get either a distinctly lower maximum mark or a distinctly heavier syllabus in examinations. It is very kind of them.

And now we owe them a new debt. We had learnt, in 1913, that the two languages to be studied in a thorough and advanced manner were to be "other than English"; our own language and literature were, by implication, unworthy of "thorough and advanced study," although the concession was made that "selected English classics" might be studied "closely and systematically," which, by the way, has a suspicious resemblance to cramming up some prescribed books. Now, in 1917, we are told that Latin may be regarded as one of the two foreign languages included under "modern studies." You see, after all the guidance we have received from our classical friends, it is only fair we should make them some return.

This is, however, far too serious a matter to be dismissed with a jest. There are many schools (especially girls' schools) which would be quite willing and able to arrange courses in "modern studies" if they were permitted to offer "thorough and advanced" work in English and one foreign modern language.

<sup>5</sup> It is clear that the Oxford Delegacy and the Cambridge Syndicate regard the Board's scheme as too comprehensive for practical purposes. Compare it, for instance, with the requirements as stated in the new Cambridge regulations for the Higher School examinations under Group II. (Languages and History): "Either two of the three languages, Latin, French, and German; or one of these languages, together with English Literature, or together with History, or together with two papers on English Literature and one paper on English History; or English Literature and English History." And what is included in the test of a "thorough and advanced study" of a modern language? Translation from and into the foreign language (no essay!), and a special period (in French it is 1800–50 at Oxford and 1815 to 1848 at Cambridge) with prescribed books (at Oxford, selections of verse from an anthology, "Hernani," "Ruy Blas," "César Birotteau," and Mérimée's "Chronique du Régne de Charles IX.", or Vigny's "Servitude et Grandeur Militaires"; at Cambridge, selections in prose and verse, "Hernani," and Mérimée's "Chronique"). By the way, a direct result of this pernicious prescribing of books is that all the candidates preparing for these examinations will become specialists (more or less) on the Romantic Movement, but will start their honours course with no guaranteed knowledge of Molière, Corneille, or Racine. Does the Board of Education regard such a course as "planned so as to lead up to attainment of the standard required for entering an honours course at a university"? If the university examining bodies can do no better than this, it will be much wiser to leave the planning to the school specialist teachers.

The regulations, by excluding English from "modern studies," render it impossible. They must offer French and German, or Spanish, or Italian, or Russian—or Latin. Many of them cannot offer the necessary advanced instruction in the second foreign language; and what purpose does a course in French and Latin serve<sup>6</sup>? That honours students in Arts at the university should not be ignorant of Latin is naturally desirable; but what they require for working purposes is something much less than a "thorough and advanced study" of that language. Many of these schools are the very best places for developing schemes of work in modern humanistic studies;<sup>7</sup> and the new regulations of the Board are driving them to science instead. It is enough to make a modern language teacher weep.

There is another aspect of the question to be considered. It is proposed to transfer pupils from one secondary school to another if their particular bent seems to fit them for specialising in a subject in which their school provides no advanced course of instruction. What will be the practical results of this? The pupil will either be diverted to the study in which the school does specialise; or, rather than go to another school, the pupil will go straight to the university after matriculating by means of the general school examination. In the latter case, the regulations will defeat the main object for which they are instituted, that of ensuring an increased supply of well-equipped students "entering an honours course at a university or institution of university rank." On the other hand, if the schools agree to let some of their best pupils continue their higher secondary-school education at other schools, they will lose some very valuable leaders in the school commonwealth, while the new school will regard them rather as potential additions to the honours list than as full members of the school, to the corporate life and traditions of which they are utter strangers. And as the grant of the Board is not proportional to the number of pupils taking the advanced course, it may even mean that the transferred are looked at askance as reducing the amount of money available for those who have been in the school for the whole of their secondary-school life.

<sup>6</sup> The advanced courses of instruction are intended (§ 48 of the Regulations) to lead up to an honours course at a university. Which university has an honours course in which French and Latin are the main subjects?

<sup>7</sup> Especially in schools such as those of the Public Day School Trust many girls stay on to eighteen or nineteen who do not propose to go to the university. A considerable number of these are interested in linguistic and historical studies, and not a few show considerable proficiency in a modern language. A course in English, French, or German and European History would suit some of these girls admirably; while for others a course in English, History (English and European), and subsidiary French, German, or Latin would be more appropriate.

But the traditions that have been established with such gratifying success in the new secondary schools are no negligible asset in growth and in the value of these schools. We are often told of the incalculable benefits that are conferred by the "great public schools" on the boys who rise to a leading position among their school-fellows. It is perhaps less well known how much *esprit de corps* or "school spirit" there is in the humbler day-schools of recent origin. There, too, lessons are being learnt by older boys and girls which they will never forget. Are we to substitute for the Secondary Form, with its boys or girls who love the school and whose very diversity of interests is a broadening influence not to be undervalued, an artificial department of science or classics, or "modern studies," robbed of boys and girls who do not specialise in a direction sanctioned for their particular school and swelled by others to whom the school means nothing but a means of preparing for an examination?

A great deal depends on the action that is now taken; the whole development of our secondary schools will be affected, for better or for worse. From what I have said it is clear that the new regulations of the Board of Education fill me with grave concern.

If I am asked what action would seem to me more appropriate to the stage we have reached and to the abnormal conditions which the national crisis has brought about, I reply that the tops of our schools were showing signs of promising growth before the war, that their development depended largely on enabling the specialist teachers to devote more time to the older pupils and on the provision of maintenance grants for the schools and that funds judiciously spent in staffing schools more generously and in giving more attention to the children of parents of restricted means would have gone a long way to increase the efficiency of the upper parts of our secondary schools. As regards staffing, there is still a great deal of misapprehension, though it may be a fair proportion in a well-established school of 300 pupils of the sexes over ten years of age, and if you reduce the head as teaching not more than half-time and if you do not include the part-time teachers of woodwork, physical instruction etc., the formula must be more or less appreciably modified where these conditions do not hold. The raising of salaries is not

be desired; but we must also do away with under-staffing. It is particularly the senior specialist whose hours at present are too heavy almost all schools; and if we lighten the burdens of the specialist we shall do much to ensure the success of the higher work in our schools. With favourable conditions of staffing and with maintenance grants for pupils who need them, our secondary schools will supply the universities with a constant flow of well-equipped honours students; and we may trust the universities to rise to the occasion. They will realise that a higher standard of work can be achieved; and instead of having to waste the first year of the honours course over school work, they will be able to give the whole three years to "thorough and advanced study." The number of those who read for a pass degree will, it may be hoped, steadily decline and the honours students will as steadily grow in number; and we may confidently look forward to a time when it will be rare in the newer universities as it is in the older to see half-fledged young folk of sixteen or seventeen as undergraduates. If they are to be found at Oxford and Cambridge, where there is many a restraint on their freedom, it is still more important in towns like London or Birmingham or Leeds. Whatever may have been the practice in the Middle Ages, it is certain that for the great majority of our boys and girls it is best to remain under the influence of a good school until they are eighteen.

In emphasising this principle, the Consultative Committee and the Board of Education have done a real service. The Board has done an equal service in directing attention to the consideration of what kind of work should be undertaken during the two years subsequent to passing the general school examination. My concern for the development of our secondary schools, of which I have been privileged to know so many, has led me to consider with earnest attention the recent proposals of the Board; and I offer this contribution to their discussion with no light heart, but also not without hope that they may lead others to offer their criticisms and suggestions, so that we may all do the best we can for the boys and girls who are to live and work in this momentous century..

*The Tutorial Chemistry. Part ii. Metals and Physical Chemistry.* By G. H. Bailey. 460 pp. (University Tutorial Press.) 4s. 6d.—This book contains a résumé of physical chemistry and the properties of the metals and their compounds, suitable for candidates for the intermediate and final university examinations. The section on physical chemistry has been revised and largely rewritten by Mr. W. H. Dauver, and contains the bare minimum of what a school student should know.

## EDUCATION, COMMERCE, AND INDUSTRY.

THE Education Committee of the London County Council has received from its Higher Education Sub-Committee a valuable report which should be of great interest to all connected with education in London, and especially to the teachers. The sub-committee interviewed representatives of the chemical, engineering, shipping, and printing industries, and heads of important companies or corporations controlling banking, financial, insurance, and railway interests, textile warehouses and stores; and also representatives of Lloyd's, of the Port of London Authority, and of commercial houses dealing with foreign exchange. The occupation groups covered by these witnesses include such a large proportion of London workers that their experience and opinions may be taken as fairly representative of the attitude towards education of the employers of London as a whole.

The inquiries were generally directed to the possibility of establishing closer relationship between business and education. The main considerations were the method of recruiting the staff of a business, the defects in education alleged by business men, the assistance that can be given to business men by local education authorities, and further education. The extracts that follow summarise the main criticisms of the business men and the comments of the sub-committee thereon.

A particular case will illustrate the main point at issue between the schools and the employers. An employer wishes to obtain clerks, and lays great stress upon their accuracy in figures; he selects them by examination, in which the arithmetic paper consists practically entirely of direct questions involving in some cases a number of figures. He requires the candidate to obtain for a pass, say, two-thirds marks. The arithmetic paper does not suit arithmetic as at present taught in the schools. Can the teacher expect the employer to change his standard of accuracy? Ought he not rather to take care that his product fulfils the employer's requirements? A closer co-operation between the employers and the schools is obviously most desirable; in those places where this co-operation is effective, the employer and the teachers can be invaluable to one another.

Whether the proposal of the sub-committee would be effective in bringing about this *rapprochement* depends greatly on the action of the advisory committees that the Education Committee resolved to call into

existence. Communication between officials and employers can produce very little effect compared with the great advantages that would be derived from the close contact of employers and teachers.

There are two points on which the teachers have to "make good"; one is noticed incidentally in the report, and the other is at the back of the whole question of the relation of business and education. The teachers must teach subjects in which their pupils are interested—subjects of present-day and everyday importance; and further, the teachers must not only teach, but also live, and conduct themselves in their everyday public and private life as men of the world should; they must not be recluses, they must not live as a class apart, but as other men, and must bear their part in the public life of the community. When the many do this successfully as the few do now, the status of the teacher will be satisfactory and the effect of his efforts will be enormously increased.

#### CRITICISMS.

In what follows, we refer mainly to the criticism directed against the educational system, and the defects of its products. It should not be, however, inferred that nothing but adverse criticism was offered. On the contrary, men of great experience expressed their satisfaction at the facilities offered by the schools, and at the capacity of those educated therein to assist in carrying on the country's business.

(a) *Commerce*.—It appeared to be the general opinion that the Council was not in touch with the requirements of business men; the admission was equally general that business firms as a rule knew little of the facilities for education offered by the Council. In the main it was said of the elementary-school boy—

(1) That he was deficient in handwriting, arithmetic, and spelling; the essentials of elementary education.

(2) That obedience, thoroughness, common-sense, and manners (good address) were lacking.

Of the secondary-school boy (including the public-school boy)—

(1) That he was deficient in handwriting, spelling, and arithmetic; unable to express himself in good English; generally he was "sloppy" in thought; "Englishmen do not know foreign languages."

(2) That he needed more grit and energy in his work.

Of both, that, to a considerable extent, (a) they took no interest in their employment outside working hours; "clock-watching" was prevalent; (b) grit, initiative, and ability to grapple with new problems were lacking. Occasionally, knowledge of history and geography was severely criticised.

Of university men, we found here and there a note of hopefulness that they might succeed, but nothing more. It was generally, if not always, the product of older universities, and not the graduate of the

newer universities, that was the subject of criticism. The evidence showed that relatively few university men, who had not family connection with business, had been appointed by any of the firms represented. In certain large houses university men were said to have failed; in others, such as life departments of insurance offices, to have succeeded.

The severest critics stated that boys have no sense of reliability or sense of honour, that they cannot convey a simple message accurately, and that they are unmannered and lacking in respect to their elders and others; that far too many girls are taught shorthand and typewriting, irrespective of their suitability, and that they do not appear to be trained in matters such as care of the person and dress; that boys do not appear to have developed a sense of responsibility, and that they need constant supervision even when they attain to middle life; that there are very few secondary-school girls who can take ordinary instructions or write a letter; and that the university product is not suitable for commercial life, does not conform readily to discipline, and is dissatisfied with short vacations.

The prevalence of "clock-watching" was mentioned in many directions, and complaint was made of superabundant facilities for pleasure-seeking. This would not be true to say that complaints of slackness were general, but they were made in several quarters.

While early specialisation was advocated in some quarters, in general business men asked that the education authority should aim at giving a general education.

(b) *Industry*.—(i) *Engineers*.—The conferences seem to show that engineers had given more attention to educational problems than any other group of employers. The majority agreed that it was too much to expect boys from engineering centres to attend evening classes, and practically all expressed themselves as in favour of compulsory continuation schools.

More theoretical training, a wider education including foreign languages taught colloquial, more attention to costs, and the teaching of economics were advocated. It was stated that a complete engineer cannot be trained in a technical institute. Engineers referred to the absence of submission to discipline, particularly marked among younger employees since the outbreak of war.

(ii) *Chemists*.—Among the chemists there was less harmony of opinion. The university man believed in university training; the individualist who had fought his way up from the lowest rung of the ladder, with the help of evening classes and technical institutes, to the highest post generally insisted that there is another way. That the research chemist is part of the chemical industry in America and Germany in a way not experienced in England was admitted and explained.

A point of fundamental importance was emphasised, viz. that students at the higher institutes are trained as *examinees* and not as *chemists*.

(iii) *Printers*.—The master-printers are evidently much more satisfied with the results of elementary education than are the majority of the business men interviewed.

in Shipping.—Certain shipowners thought that some good might be done by a system of secondary education which would have the effect of turning the thoughts and desires of a large proportion of the youth of this country in the direction of the sea, provided that the education was on sound lines"; it was felt that more importance should be directed to the practical as opposed to the theoretical side of a lad's training in the early stages; and that it is little premature to teach a boy to be a captain before he has been trained to be a sailor.

#### COMMENTS ON THE CRITICISMS.

In what may be described as the better class of appointments the system of nomination followed by examination is quite common. Under restricted conditions of appointment, employers and managers ought to expect to obtain the best products of the schools and ought not to assume that their selections are even typical. The system of nomination may, in fact, tend to develop those very characteristics which are so severely criticised.

Some of the witnesses were kind enough to produce copies of their conditions of appointment, examination questions, and in the case of a few large firms, to permit the Council's inspectors to see the written results. The written answers as a whole were certainly open to strong criticism, but an analysis into two groups of candidates—(1) those recommended by their schoolmasters, (2) those without such recommendations—gave the results an aspect much less unfavourable to the schools. It is important, too, to remember that the standards of the business man and the schoolmaster differ. The business man is rightly ignorant of error; the schoolmaster, being engaged in constructive work, is surrounded by inaccuracy, and the rules of intolerance are less firmly drawn. All these considerations must be borne in mind in formulating conclusions to be drawn from the evidence which has been placed before us.

The criticism as to deficiency in handwriting, spelling, and arithmetic is not new, and it is certainly not without foundation. The teaching of arithmetic is far more intelligent to-day than it was ten or twenty years ago, but there has been, in the opinion of a large number of schoolmasters, a distinct loss in accuracy.

With regard to moral qualities, the firms may not be getting what they want, but the schools are far more successful in this respect than the firms imagine. There is no finality, and for the schoolmaster there can be no repose.

"Clock-watching" and lack of interest in their employment outside business hours no doubt exist. The criticism of the business men cannot, however, be easily dismissed; it comes too frequently and from too many quarters not to have some good foundation. The question is resolved into whether human nature or business or education is at fault.

The attitude of business men towards compulsory day continuation schools is much more sympathetic than it was. The evening schools in London are receiving greater encouragement from the large em-

ployers. One immediate result of the interviews is the considerable support given this session by some of those interviewed. Business men are beginning to realise the value of further education, both as an asset in business and as a means of qualifying the citizen for his wider duties.

It is more the teacher than the subject that matters. Modern knowledge is, moreover, more likely to quicken than ancient lore. What is needed is fewer subjects, more thoroughness, more stimulating teaching, greater acquisition. In schools with a commercial bias, or modern side, room should be found for economics, a subject which, if properly handled, would provide the stimulus to interest in the world's affairs. It was refreshing to hear one or two business men raising commercial education to a higher plane. Unfortunately, commercial education is too frequently spoken of and thought of only in terms of shorthand, bookkeeping, and typewriting, what one large employer called the "lowest class accomplishments"; and too rarely in terms of London, the centre of the world's finance; London, the centre of the world's shipping trade; London, the clearing-house of the world's commerce. Wireless telegraphy, oil, rubber, high-speed engines are transforming the world: to adapt a well-known quotation—*tempora mutantur: nos et mutemur in illis*. Education must move with the times.

#### PROPOSALS.

It may be said at once that the interviews disclosed such an isolation of industry and commerce from education as is opposed to the interests of the community, a condition of things which it would be a grave mistake to leave unremedied; they revealed in unmistakable terms the need on the part of both business and education of a much closer general co-operation. The business man must be left no longer to know education only as a growing demand on the rates for which he receives incompetent boys in return. Further, education must no longer be left in its position of isolation from the business world. Education is far too much the sole concern of schoolmasters and ex-schoolmasters.

We accordingly propose that the Council shall enlist the co-operation of prominent business men and men of affairs to bridge the gulf which separates education from commerce and industry. We have given the question careful consideration, and we think that as a beginning the Council should form advisory consultative committees of business men for banking, chemistry and engineering. Generally the duties of these committees, consisting each of about twelve members, should be to visit at convenience the institutions (aided and maintained, day and evening) at which instruction in connection with these groups of occupations is given; to offer on the spot such criticism as they think advisable; to meet at least once a year and submit in a more considered form such general criticism of the character of instruction, equipment, and accommodation as appears necessary. On the whole the duties would be light, but the advantages would be great. It would be an immediate encouragement of the most direct

kind for students of banking, engineering, chemistry, and so on, to know that the instruction offered was thought of so much importance as to bring into their school the leaders of their trade or industry.

The Education Committee agreed to form the committees, which were constituted as follows:—

*Banking.*—Sir Charles Addis, Hong-Kong and Shanghai Bank; Mr. F. J. Barthorpe, London County and Westminster Bank; Mr. R. M. Holland, C.B., Martin's Bank; and Mr. R. J. Hose, Anglo-South American Bank.

*Chemistry.*—Mr. A. Chaston Chapman, F.I.C., F.C.S., F.R.M.S., consulting chemist; Mr. G. E. Pearson—Messrs. Burroughs, Wellcome and Co.; Mr. C. F. Cross, F.R.S.—Messrs. Cross and Bevan; Mr. J. W. Harbord, F.I.C.—Hon. Adviser in Metallurgy to the Ministry of Munitions; Sir Boverton Redwood, D.Sc., etc.—consulting chemist and engineer; and Mr. Robert L. Mond, F.R.S. Ed., F.Ph.S.

*Engineering.*—Mr. E. Bruce Ball—Messrs. D. Napier and Sons; Dr. Dugald Clerk, J.P., D.Sc., F.R.S.—National Gas Engine Company and Messrs. Marks and Clerk; Sir John Snell, M.I.C.E.—Messrs. Preece, Carden, Snell, and Rider; Mr. W. Stokes—Messrs. Ransomes and Rapiers, Limited; Sir Vincent L. Raven, M.I.C.E., M.I.M.E.—N.E. Railway Co. and Superintendent of Royal Arsenal, Woolwich; Mr. Charles P. Sparks—President of the Institute of Electrical Engineers; Sir Chas. A. Parsons, K.C.B.—The Parsons Marine Steam Turbine Co.; and Mr. J. Dewrance, M.I.C.E.—Messrs. Babcock and Wilcox and Messrs. Dewrance and Co.

### THE SCOUT AND SCIENCE.

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WHATEVER other reforms our educational system may demand, there is a fairly universal agreement that the mental equipment of our future citizens must include wider scientific interests and sympathies. There is no one royal road by which this is to be brought about, though the necessity for some revision of our school science courses seems to be self-evident. Our present concern, however, is with the Scout movement, the great and growing importance of which, as an educational force, schoolmasters are far too slowly recognising. The value of the Scout training as a means towards the end we are considering is twofold. It reaches a class of boy who, owing to the early age at which he leaves school, is not likely to receive much science training within the walls of his classroom, whilst it is of the essence of the Scout training that it brings the boy into intimate contact with Nature and with the applications of natural laws in human life. It aims at a practical efficiency—a prepared-

ness for the happenings of everyday life; the fostering of an interest in Nature and natural science for its own sake must remain secondary.

But, as every science teacher knows, there is no surer way to arouse the boy's interest in the principles of natural science than by acquainting him with their manifestations in everyday experience, whilst the most complete practical efficiency is based on an intelligent understanding of the principle involved. That the science teacher and the Scoutmaster have so many aims in common must be our excuse for presuming to discuss Scout matters from the point of view of the science teacher.

First of all it is necessary to point out that in quite an unexpected degree, no sooner does the boy become a Scout than he immediately changes his attitude towards many branches of learning. He gets a desire to know the ins and outs of things, and, provided the things have anything to do with his Scout life, you may teach them in school and he will persist in regarding them, not as lessons to be done, but as aids to greater proficiency as a Scout. Not only is there this change of outlook, but there is a laudable keenness to earn one or more of the fifty odd badges which are open to the boy who has attained the rank of the second-class Scout. It is by means of these badges that the science teacher will realise his aims.

The badges are given for Nature-study, photography, astronomy, geology, electricity and other similar subjects; while work for the rank of first-class Scout of itself demands a certain amount of practical astronomy, mathematics, and geography. In an ordinary way a boy "has no time" to do work in any subject in addition to that given him by the teacher of the subject as a definite allotted task. But it is wonderful what a lot of time he can find for anything he is really keen about.

It would be impossible, in the space at our disposal, to point out, in any great detail, how the science teacher may utilise the Scout badge system to help him, but a single reading of "Scouting for Boys" and the "Rules of the Boy Scout Association" would wide open his eyes.

Let us briefly illustrate. A Scout has learned to write a report of a journey. He has to describe the country he has seen. If there are trees, he frequently uses the vaguely descriptive term "wooded." The man who teaches Nature-study will get a very attentive and enthusiastic audience of Scouts if he proposes to take them, on a few half-holiday

to study the trees, so that the report may be more accurate and trustworthy. He will find that every member of his party *wants to know* the trees are fir or larch—suitable for bridge sites; if they are willows—that indicate the presence of water; if they are pine—abundance of fuel. They will sketch, collect bark and leaves, and note uses and habitats with glee.

Or, again, the teacher of electricity will find that he can get all kinds of home-made apparatus and private experiments leading to the knowledge required for the electrician's badge.

The teacher who, stimulated by this article, draws the syllabus of work for the badges may be a little disappointed with the official requirements, some of which do not seem to be suitably drawn either as to knowledge of the object or as to what may be expected of the average boy. But there is no reason why these syllabuses should be adhered to. In the case of work done under education authorities it is possible for the syllabus to be varied, and it is, therefore, always open to the science master to arrange a special course of work suited to his own pupils. And we would urge that the work to be done by the boy for his badge should be essentially practical work and outdoor observation.

Take, for instance, the naturalist's badge. A boy can get this by making and naming every meagre collection of leaves or flowers. But the teacher of Nature-study could ask for a three months' Nature-study diary, for a study of the life and development of the tadpole, for a list of local birds, with an account of their nests and eggs and their cries, flight, and food values. He could include the leaf collection as well, and so fulfil his own and the official requirements. Nature-study rambles can be counted as Scout parades, and Mr. Burston's article in THE SCHOOL WORLD for January, 1915, on geographical studies outdoors will show other forms of activity to the enterprising Scoutmaster.

If you have no Scout troop, and so have no these incentives at your disposal, start a Scout troop in the form whose work you are interested in, and you will soon become a visionary in the matter of propaganda. So great is the variety of subjects for which badges are offered that whatever the boy's tastes may be, he must find something in which he can interest himself.

This discussion of how the incentive of the badge may be utilised in school science work brings us very near to controversial ground. The teacher who refuses to admit any taint of utilitarianism in the science course will scorn the suggestion of making use of Scout badges. When, however, the value is recog-

nised of the living interest brought into the science work by the extensive use of illustrations from everyday life, and still more when the science course is frankly on the lines of applied science, the badges will be found of considerable value.

### POETRY AND THE CHILD.

By CLOUDESLEY BRERETON, M.A., L.-ès-L.

IT was Sainte-Beuve who said: "In every young man there dies a poet"; I would add: "In every young child there dies a reciter." We talk about infant mortality in general; but, in spite of many modern reforms, the mortality among children reciters is very great, and I believe in a large measure preventable. Some, I fancy, perish still-born from sheer lack of using their talents. Others succumb to a sort of pernicious anaemia because, where they ought to be reciting "Lars Porsenna of Clusium," they are droning out the rhymes of the Latin grammar. Of course, things are vastly better than they were in my day, for those of my generation were largely brought up under the motto "Little children should be seen and not heard." Personally, I never remember learning any poetry before the age of nine, though one certainly picked up a few nursery rhymes and some hymns by dint of listening to them. The only outlet for elocution was the Catechism, that marvellous epitome which one learnt to admire in later years as a veritable *tour de force* in doctrinal statement; but to the young, at least in my day, it possessed all the horror and repugnance of a penal code. The collects and parables came later. There was in them, especially in the former, much that was frankly unintelligible, but they had a stately rhythm about them, which helped one comfortably over the passages one did not understand. Indeed, I think we might do more than we do, at least in the later stages, in the way of committing prose to memory. Appreciation of rhyme probably precedes the feeling for rhythm, yet I believe a sense for rhythm can be easily evoked or evolved in most children. The child's conscious attempt to create its own private language, which in some families is developed to a considerable extent, is evidence of this, and also the child's love of talking "gibberish." Children, in fact, love the sonorous. Their tongue dances to a haunting phrase. Undoubtedly the joy of playing with sound is very great—even the baby howls for the pleasure of howling. It is one of the first instruments he finds he can use, and the joy in sound, for the sake of sound, persists to a much later age. How often, even with

"grown-ups," does some totally irrelevant word or phrase, be it "Mesopotamia" or "Punch with care," cast its spell over us. Poets never lose it: witness such phrases as "silken Samarkand," and their love of geographical names the very remoteness of which adds a sense of mystery. Personally, I suspect that the potency of spells often comes from a person repeating them over and over again until spell-binder and victim are alike hypnotised by the repetition. This is, again, no doubt the real *raison d'être* of the chorus in verse or song. I remember, too, in my own case going round the garden saying indefinitely to myself, "Sempach, 1388. The Swiss beat the Austrians"—a prosaic little sentence from Cornwall's Geography, and yet it stuck.

Then, again, my generation suffered from the child-poetry of the day, with some exceptions, being violently moral. True, there were Mrs. Hemans and Mary Howitt, but Dr. Watts and his school still held pride of place. I have often wondered why this moral poetry was so repugnant. I believe the main reason is that the child at this particular stage is striving after freedom—not uncharted freedom, but freedom in order to get a mastery, physical or mental, over his surroundings. He wants to know how to do things, or how things are done, but he does not want to know how not to do them. He wants to experiment, to find out for himself, and the moral poems of the day either prescribed a definite course that ruled out experiment, or, still worse, introduced a sort of total prohibition of many things that seemed to him innocent, and probably were. Then, again, the theology secreted in these poems was even worse than the natural history. It was possible to believe, even if one's observations inclined to the opposite view, that birds in their little nests agree, but the Draconian idea that the theft of a pin was as heinous an offence as the commission of murder apparently rendered the game of life unplayable.

Again, the critics of the day had nearly forgotten that poetry was poetry. In spite of the presence in their midst of such masters, for instance, as Tennyson and Swinburne, they ignored the close connection between poetry and music and the absolute need of reading verse aloud, if an adequate opinion of its merits is to be formed.

To take the first point, Sir Rabindranath Tagore once told me that in India, when anyone desires to write a poem, he first composes the tune and then the words. Personally, I believe this was always the way in primitive times, when even narrative poetry was chanted by the professional minstrels in a sort of

recitative—a practice which also obtained on the French stage in the times of Corneille and Racine, and even later. This music gives the mode of the emotion as well as suggests the *tempo* at which the verse should be taken. But the mid-Victorian critics made a fetish of scansion. Metre meant to them something more or less regular, not to say "faultily faultless." Apparently, they wanted everything written as if you could clog-dance to it. The ideal was, not music with its subtle *accelerando* and *rallentando*, but the more or less monotonous beat of dance music. The apparent freedom of the nursery rhyme and the ballad disconcerted and annoyed them. There was a tendency to make metre as monotonously regular as the heroic couplet became in the eighteenth century—about the best way of killing it, by substituting the mechanic for the vital.

The amount of dreary rubbish written about prosody by people who could only count syllables or strum over a metre like a banjo player is to be matched, though not equalled, only by the elaborate and often useless dogma that has been evolved round French poetry. The worst of it is that our pupils still waste their time in studying these so-called rules of prosody, which, if strictly observed, would effectually prevent any real poetry being written at all. If every book of English prosody were burnt, poets and those who read them would probably be the gainers. The few rudimentary ideas they contain on the subject which are more or less common property are as nothing to the lumber and top-hamper with which they are loaded up and weighed down, not to mention the positive blunders with which they abound, as, for instance, such hoary errors as that English poetry is written on an iambic, instead of a trochaic, basis, or talking of such impossible things in English poetry as anapaests. Happily, our masters of metre, like Swinburne, even when they thought they were conforming to the cookery-book recipes of the pedants of these times, really followed the sounder instincts of their genius, as Mr. Barnesfield is proving in so conclusively a manner.

The sins of these critics did not, however, end here. Coming at the fag-end of the period that marked the very nadir of the cadence of rhetoric, they attached even greater importance to "eye"-rhymes than to "ear" rhymes. Poetry, it would seem, was to be seen, but not heard! A word that rhymed with the ear and not to the eye was regarded as an eyesore. They did not realise that the justification of the rhyme of "love" without "prove" did not lie in the fact that in our

rtificial spelling the two were identical to the eye, but that assonance rhymes are a perfectly legitimate, and indeed desirable, device in poetry, as are also words of identical sound but with a different meaning, as anyone who is acquainted with French verse knows. It is the fashion, dictated by people who merely wanted to make rhyme more rare and difficult, which has prescribed this particular form of rhyme in English, on grounds about as logical as Ovid's prescription of a three-syllable word at the end of the pentameter, which Properus, a far subtler metricist, used at times to such purpose.

Happily, phonetics is gradually cutting the ground from under this school of "eye"-rhymers, but they die hard. People are still obsessed by the spelling of words that they will fail to recognise their real sound and music. Some while ago I was talking to a highly cultured musician who really ought to have known better. He had been attending a course of phonetics by a German professor, but he had given up in disgust because the professor insisted that the ordinary pronunciation of the English word "nature" was as if it were spelt "naytcher." "Did you ever hear such a ridiculous pronunciation?" he asked me, and in the same breath called the word "naytcher" himself.

And, finally, the current literary criticism of the day was almost entirely divorced from aesthetics. Poetry was dissected for the ideas it contained or the moral it carried. The beauty of the language as a whole, its appropriateness, the intimate correspondence between the form and the subject-matter, were more or less ignored, as were also the development of the subject and the organic oneness not of the poem—in fact, all that deals with the larger technique. The criticism of the day rested on some jot or tittle like a supposed faulty rhyme or error in grammar and condemned the poem on the strength of these *ecrabilloes*—on what may be called the nursery-governess code—or it picked out a fine phrase here or a fine phrase there and judged it on these ornaments and flowers of speech, as if you could judge of a bracelet or a brooch from the number of precious stones that had been worked into its manufacture irrespective of its workmanship.

The child to-day is far more free to re-create the world around him after his own fancies than we of the past generation were. We came into an unfamiliar world which the interpretation of grown-up people only seemed to render more unfamiliar or repellent. We had, in fact, largely to make our own fairy-tales and guard it jealously from the prying

oversight of our superiors. But the child of to-day has at his disposal a host of writers to explain to him the realm of childhood and interpret his particular feelings and emotions almost from the cradle; while as he grows older Stevenson and Kipling, to mention only two, are there like elder children to take him by the hand and lead him through the inheritance that is his. To-day we recognise that recitation and dramatisation are the best forms of physical exercise for the emotions. We know that in a subtle way these not only strengthen the physical organs of expression, but also set up psychical rhythms that act as healthful tonics in the physiological sphere. Again, we are more and more recognising the value of a sense of rhythm as a common ground for the appreciation of music and poetry, while the growing stress that is laid on the spoken word is silently discrediting the race of those that judge poetry by the printed letter rather than by the sound.

Moreover, we are learning in our schools, albeit far too slowly, that the analysis of a poem, while essential with older children, is justifiable only when used to explain the value and import of each detail in its relations to the poem as a whole—in order, in fact, that we may appreciate the poem as a complex yet single work of art. Threefold is the process we have to follow: we must first try to get a bird's-eye view of the poem, then we must pick it to pieces or dissect it in order to realise the beauty of the fabric and the artistry of the workmanship, and finally we must attempt once more to look on it as the supreme and unique expression of a certain phase of life. Synthesis is, indeed, the beginning and end of the process, analysis merely the means of rising to a more complete synthesis. It is the scientific as contrasted with the artistic state. And the analysis must be suited to the age of the pupils; otherwise the third stage is never reached, as is illustrated by the saying of the child who declared that he understood the poem until it was explained to him. Finally, probably the best way of enabling our pupils to understand poetry is not to burden their minds and memories with the antiquated lumber which poses under the name of prosody, but to encourage them to write verses of their own. They will then learn by doing—the best method of all; while a comparison between their own callow efforts and those of the full-fledged poet will give many of them a certain standard of self-criticism and inspire in them the most thorough-going respect for their poetical betters, just as the man who has played billiards or cricket can alone appreciate the super-art of a Roberts or a Grace.

## SCIENCE TEACHING IN RURAL SECONDARY SCHOOLS WITH REFERENCE TO A LIBERAL EDUCATION.

By WILLIAM ALDRIDGE, B.A., B.Sc.  
Headmaster, Shepton Mallet Grammar School.

THE view as to what constitutes a liberal education will vary according to the observer's own education and experience. The words may be conceived to connote an education which trains the whole of a boy's bodily, mental, and spiritual faculties to the fullest possible extent, and renders him the most intelligent and the most useful member of the community he is capable of becoming. No one-sided system of education can fulfil these objects, and the duration of the school period of life is too short to accomplish the whole of them while the pupil is at school. Our system must therefore fully employ the limited time at our disposal, make the pupil anxious to continue his education after school life is past, and show him the path along which he must go to reach the desired goal.

I propose to treat the matter from the point of view of my own experience and to leave purely theoretical considerations out of the question. It is postulated that a liberal education must include, in addition to a thorough grounding in reading, writing, and arithmetic, the study of the English language and literature, composition, grammar and spelling, history, geography, mathematics, one or more languages other than the mother tongue, science, physical and manual training, with some artistic training, including drawing or painting, music, etc. The spiritual side of the problem demands that religious knowledge must not be crowded out. This wide and varied programme requires that the school life shall be a time of strenuous endeavour, and character training will be more perfect if there is greater regard paid to economy both of time and materials than is at present the case in many schools.

The preliminary training of our secondary-school pupils, at any rate so far as the rural districts are concerned, needs drastic reformation. Private schools are generally bad, and the public elementary schools, though better, are in many respects deplorable. Writing, spelling, and grammar seem to be practically neglected; arithmetic is taught largely by unintelligent, rule-of-thumb methods; pupils answer questions in monosyllables and have only the crudest notions of arranging their thoughts in logical sequence and transferring them to paper. The elementary schools should confine themselves to their normal functions and teach thoroughly the fundamentals of a sound edu-

cation—reading, writing, arithmetic, spelling and the rudiments of English grammar and composition—before attempting to add such or secondary subjects. Sufficient attention not given to training the intelligence and thinking powers of the pupils, so that much valuable time in the secondary school is wasted in laying foundations which ought to have been well and truly laid before the secondary school was reached. Primary-school teachers often attempt to teach subjects of which their own knowledge is slender and inaccurate. Since examinations have been abolished I find elementary schools have been getting more and more unsound as a foundation for good secondary-school work, and, on an average I believe that with pupils entering at twelve or thirteen years of age we could do as much in two years as we now do in three if the fundamentals were properly taught in the preparatory schools.

As a division of time which I have found to give satisfactory results, I submit the following distribution of class hours:—

*For Pupils from Eight to Twelve.*—Religious knowledge,  $1\frac{1}{2}$  hours per week; English subjects, including reading, writing, spelling, grammar, composition, history, and geography, 15 hours; arithmetic,  $7\frac{1}{2}$  hours; physical exercises (excluding organised games),  $\frac{3}{4}$  hour; and music (singing),  $2\frac{1}{4}$  hours; science, 6 hours.

*For Pupils Twelve to Fifteen.*—Literary subjects (including religious knowledge, English, geography, and history),  $7\frac{1}{2}$  hours; mathematics, 6 hours; language (French),  $3\frac{1}{2}$  hours; manual and physical training (apart from organised games), 3 hours; science, 6 hours; art and music,  $2\frac{1}{2}$  hours.

*For Pupils Fifteen to Eighteen.*—Literary subjects, 9 hours; mathematics, 6 hours; language,  $5\frac{1}{2}$  hours; science, 6 hours; physical training,  $\frac{3}{4}$  hour; art,  $1\frac{1}{2}$  hours.

In the first division the science consists of informal investigations which may be roughly designated Nature-study. The lessons are essentially observation lessons ranging over a very wide field, in which we try to train the pupils' powers of observation and description by searching questions answered in full and complete sentences, monosyllabic answers including such answers as "Yes," "No," without qualification, being usually rejected as unsatisfactory. Scientific terms are in the main avoided, but accuracy in idea and in description is demanded. Many questions are asked by the pupils, and the spirit of inquiry is fostered. Natural phenomena, plant, animal, and insect life, simple experiments in mechanics, chemistry, physics, etc., are drawn upon for subjects, and the course

nade preparatory to that in the middle forms. A good deal of drawing and sketching is included in the course, and the information gained is often made the basis of composition exercises. In the hands of a skilful teacher these lessons are most valuable in awakening the intelligence and the latent powers of the young mind. They are greatly enjoyed and the pupils often suggest subjects for future lessons. They frequently develop into country rambles and scientific excursions with a definite object on half-holidays.

In the middle division the science lessons become more systematic, and include the elements of physics, chemistry, and botany treated in simple fashion and with the underlying object of throwing as much light on country life as possible. This underlying principle gives point to the course and makes it much more fascinating than the ordinary course of pure science studied with no definite objective. It leads into many by-lanes of discussion and follows no text-book, but it is sound exceedingly educational and mind-wakening. Its aim is not to teach farming, but to give country dwellers a living and intelligent interest in what is going on around them day by day. Incidentally it supplies most valuable information to those destined to engage in agriculture and horticulture, and lays a secure foundation for the technical training given in agricultural colleges and elsewhere. The course includes fundamental ideas on the properties of matter, mechanics, heat and light, chemistry (including some organic), and many. The physics includes much that is still nowadays dealt with under the head of geography, and goes somewhat thoroughly into such matters as the properties of liquids and gases, capillarity, surface tension, osmosis, specific heat, latent heat, conduction, radiation, convection, and the idea of heat and light as forms of energy. The bearing of these and of the chemistry on problems connected with soil physics, the formation of soil, its temperature, etc., and the bearing of the whole on plant and animal life and nutrition, are apprehended as clearly as possible. The history of the pioneers of science is not neglected, and the work of recent discoverers is kept constantly in view.

The lessons consist partly of demonstrations with discussions bringing out the meaning of what is observed in them, partly of practical work carried out by the pupils themselves in the laboratories and on outdoor demonstration plots, and partly of more or less informal discussions arising out of the operations which are to be observed going on around the school neighbourhood in field, farm, garden, or elsewhere, applying the science to the explanation

of the reasons for those operations. The boys frequently suggest topics for these discussions. In the laboratory they work in pairs, and each pair, as a rule, is working at a different problem from the other pairs. This economises apparatus and fosters independence of action.

In the highest division the science becomes more systematic still; text-books are used, but the knowledge gained is still applied to the problems of country life. Heat, light, and sound, and magnetism and electricity are treated in alternate years; chemistry deals mainly with substances which are of importance in connection with agriculture; and botany, which has hitherto been mainly physiological, now includes the systematic study of those orders (chiefly) which include farm plants and weeds. Sufficient animal physiology is introduced to give a general idea of the structure of animals, how their bodily heat and energy are maintained, and how their nutritive and other functions are carried on.

Many years of experience in the working of the course very roughly outlined have led me to the opinion that science ought to be given a more prominent position in the curriculum than is usually accorded to it; that some such course as that outlined should be general in all rural schools, and that even in urban schools the science course should, so far as possible, include the application of the scientific principles which are studied in the school to the understanding of the science underlying the manufacturing processes carried on in the neighbourhood and with the practice of which most of the pupils will be more or less intimately acquainted; that science as commonly taught is usually too much influenced by text-books and examinations and is treated in too mechanical a fashion. Science gains enormously in interest by being extricated from the time-honoured grooves and becomes a very powerful educational implement. I am convinced that, at any rate so far as country boys are concerned, science is a much more efficient instrument educationally than Latin.

Although the course outlined appears at first sight to be a specialised one suitable only for farmers, it is really not so, for the understanding of plant and animal functions as the main ulterior aim of the application of the knowledge gained is of so general an interest that it may almost be said to be universal, and the method of applying the science to these practical problems is instructive to all and may serve as a model for lines of investigation in other directions.

In conclusion, I would point out that it will be a somewhat futile proceeding to revise our curriculum and methods of teaching science

unless a reform is made in the inspectorate. At present an inspector who has had no experience at all in teaching and who possesses absolutely no knowledge of science may be responsible for writing reports to the Board of Education on schools which devote a considerable amount of attention to science-teaching. My own experiment might have been wrecked some years ago by an inspector who reported that I was attempting to do what was impossible. Fortunately for me and the experiment, my governors had more confidence in me than they had in his report.

### THE WILLIAM ELLIS SCHOOL GEOGRAPHY ROOM.

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THE Geography Room at the William Ellis School was opened during the Christmas term, 1913. It is situated on the

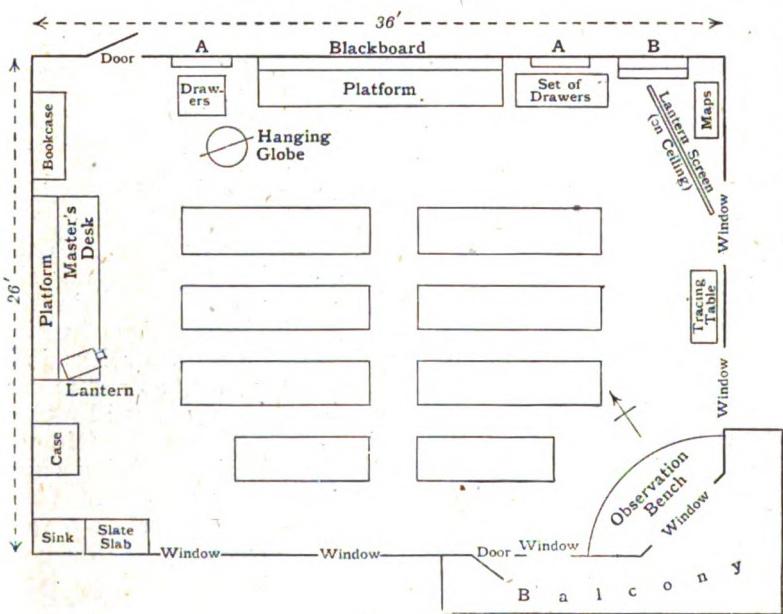


FIG. 1.—Plan of the room.

first floor, its length being 36 ft. and its breadth 10 ft. less. It will thus be seen that the room is much larger than the ordinary school classroom, which is often too small for geographical purposes. The best wall in the room is the long one containing the door, and, as much space is necessary for the hanging of maps, charts, etc., it was decided that the desks should face in its direction. From the point of view of lighting arrangements only, the best way to face the desks would have been in the direction of the master's desk, so that the light

is received from behind and from the left-hand side. However, the room is so very well lighted that there is no disadvantage in receiving the light from behind and from the right, whilst it is of great advantage to be able to hang at the same time, say, relief, climatic, vegetation, and population maps of a region. The maps are hung on three long racks drawn up and down by means of cords working over pulleys (see Fig. 3).

Having fixed the direction in which the class should face, the next problems were the positions of the lantern, lantern screen, master's desk, and observation bench. The lantern is placed on the master's desk, and the screen is fitted on spring rollers and fixed in a case attached to the ceiling in the east corner of the room. The arrangements for darkening the room are very simple, the chief point aimed at being the speed with which it could be accomplished, for it is the rule rather than the exception that the most valuable function of the lantern is for use for a short time at some

particular point in a lesson rather than over a length of time. Dark blinds, fitted on spring rollers, are made to run in wooden grooves at the sides of the windows. These arrangements have proved very successful, for the room can be darkened in from eight to ten seconds even by the youngest boys, whilst it is only necessary for the boys to turn slightly to the right in order to obtain a full view of the screen (7 ft. square).

The position of the master's desk was easily determined. There is really no need for a "lecture

desk placed immediately in front of the class and cutting off easy communication between master and boys, so that this desk was fixed on the left-hand side of the class in a position from which the master, when using it, whilst the boys are doing work by themselves, can exercise full "administrative" control. Besides ordinary drawers, the master's desk contains a large number of long, narrow drawers, each capable of holding lantern slides.

The observation bench is perhaps one of the

ost interesting features of the room. It is 6 ft. 6 in. long and 2 ft. 6 in. at its greatest width, and is placed behind a south-facing ate-glass window. Upon it all the sun ob-ervation work, so important in the early stages geographical teaching, may be carried out, alst for the same purposes there is a balcony which access may be gained without leaving e room. Brass studs have been driven into e floor near the bench in order to mark the rdinal points. The writer would strongly ge any teacher contemplating the provision a special geography room to include in his arrangements an observation bench and win-

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ong, and two  
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They are provided with drawers  
ge enough to take a sheet of the Ordnance  
urvey, and with pots for red and black ink,  
ilst chairs provide seating accommodation.  
The blackboard, which is very large (10 ft.  
4 ft.), can be moved up and down in guides  
ed to the wall. Other items of furniture in-  
lude a large bookcase, the deep glass-fronted  
upboard standing between the master's desk  
nd the sink and used for the storing of speci-  
ens, models, etc., a glass-fronted geological  
upboard, two sets of drawers (one on each side  
f the blackboard) for the storing of Ordnance  
aps, tracing paper, squared paper, etc., and  
(tracing table. The last-named is 4 ft. 3 in.  
y 2 ft. 7½ in., and has a plate-glass top pro-

tected by a movable wooden cover, below  
which are placed four electric lights. Inciden-  
tally, it may be noted that the master's desk,  
the two sets of drawers, the observation bench,  
and the tracing table are all teak-topped.

There should be plenty of cupboard accom-  
modation in a geography room, for it is really  
astonishing what a large collection of material  
one soon gets together. Cupboards are there-  
fore provided below the tracing table, the ob-  
servation bench, and the sink and slate slab.  
If the room had been wider, additional accom-  
modation would have been obtained by in-  
cluding in the fixtures a long table beneath the



FIG. 2.—North corner of room.

windows along the wall behind the class.  
Below the table, cupboards could have been  
built. The sink and slate slab are used for  
many purposes, but especially for work in con-  
nection with the making of models. In pass-  
ing, it may be noted that a water-supply is  
frequently of value in a geography room.

There are two large globes, one which can  
be carried about, and another fixed to the ceil-  
ing, but capable of being moved up or down  
by means of pulleys. The latter globe is  
black, except for the white outlines of the con-  
tinents, and is of great value in teaching.

Provision for the exhibition of work,  
weather charts, etc., is made by two shallow  
glass-fronted cases placed on each side of the

blackboard, as well as by two green-baize-covered boards fixed in the walls at convenient places.

There only remains to mention the map cupboard. This very important item is a tall cupboard placed in the east corner of the room. The maps are hung by means of hooks placed in the ends of the map rollers and attached to other hooks fixed into the top of the cupboard, care being taken to arrange the latter hooks in diagonal lines. This method of storing maps is much better than the old-fashioned map-racks. The remainder of the apparatus need scarcely be mentioned here.

are many in such a position at the present time. Where the room is an old classroom which is being adapted for geographical teaching, some of the arrangements are perhaps more difficult to make than in the writer's case, where the room was entirely new, the only factors over which he had no control being dimensions. Nearly four years' work in the room has proved the enormous value of a special room. It has also demonstrated that its arrangements are excellently suited to those practical teaching purposes for which it was designed, for there is nothing in it what is of real practical utility.

The writer is greatly indebted to his predecessor, Mr. J. F. Grieve, who, leaving the school, left behind him a legacy of plans, features, which closely approximated to his own views though he did not find it necessary to make much alteration, and Mr. E. B. Cumberland, the headmaster whose interest and sympathy made it possible not only to the school be one of the



FIG. 3.—East corner of room.

Most of the frames containing pictures or maps have movable backs so that there may be changes in the material exhibited, whilst Fig. 2 shows the method of displaying photographs or picture-postcards of geographical interest. These are pasted on cardboard, which is placed between grooved strips of wood fixed to the walls. The writer desired to have the journey of Columbus as a pictorial frieze, but, for many reasons, fell back upon the names of great explorers—a device which is not without merit, since it gives to the room a definite geographical character.

This article has been written not to urge the necessity for a geography room, but to help any teacher who may be planning one, and there

pioneers in the improvement of geographic teaching, but also for the room to materialise. He is indebted to his colleague, Mr. F. W. Robinson, for the two photographs which, together with the sketch-plan, render a fuller account unnecessary.

*In School Science and Mathematics* (vol. xvii., No. 5, May) contains a detailed article on "Field and Laboratory Instruction in the Ecology of Animal Life." The apparatus is fully described and illustrated, and numerous suggestions for experiments are given. Other useful contributions are on the periodic system and the structure of atoms, and on the modern view of radiation; the latter is based upon three lectures delivered recently at the Royal Institution by Sir Joseph Thomson.

## ENGINEERING TRAINING AND EDUCATION.

THE Board of Education has just issued an information leaflet (Circular 999, price 1d.) giving a brief account of the various forms of engineering training. This account is intended primarily for the use of engineering employers and employees, and for others who may be interested in the subject, but are not intimately conversant with it. The Board wishes to make it clear that the pamphlet has been prepared with a view to existing conditions, under which evening schools afford one of the principal means of part-time further education, and its publication is not intended in any way to prejudice the possibility of introducing a more comprehensive or effective system in the future.

It is pointed out that the active co-operation of men who are engaged in the practice of engineering with the education authorities who provide engineering instruction is essential if improvements in the existing schemes of training are to be brought about, or if they are to be carried out successfully in any form.

The opinion is expressed also that if the summary given in this pamphlet should help the practical engineer to give more effective support to any of the forms of instruction mentioned in it, or to initiate further useful developments, its purpose will have been fully served.

Since there is nothing whatever in the pamphlet unknown to those engaged in engineering education, it may be taken that the principal purpose is an appeal for greater co-operation on the part of the practical engineer. That close co-operation has been desired for many years by our engineering colleges is well known. Many of our best engineering firms have long been in close touch with the colleges and schools in which their employees are educated. The part which has been, and is being, played by our technical colleges since the commencement of the war has enlightened other firms to the value of their work. The discussions which have been held by our technical societies have also assisted, and several of these societies have already pronounced in favour of certain schemes of co-operative training for apprentices.

There can, therefore, be few engineering employers who are not aware of the present move towards co-operation, and the Board's pamphlet may possibly be of assistance to those who have not yet taken up any definite scheme for their apprentices, but who are desirous of doing so. It must, of course, be recognised that the particular scheme which

suits one firm engaged on certain classes of work and employing a large number of apprentices may be quite unsuited for another firm engaged on other kinds of work, or perhaps employing a few apprentices only. The Board points out that it has inspectors who have had practical engineering experience available for the giving of advice on educational matters specially connected with the engineering industry. It might also have been pointed out that every college has a head of its engineering department who not only has had a practical training, but is intimately acquainted with the needs of his district and would welcome the closest possible co-operation.

We append some extracts from the pamphlet:—

### THE GENERAL PROBLEM OF AN ENGINEERING TRAINING.

It is a characteristic of the training of an engineer, whatever his grade in the industry is to be, that this training must include both practical experience in the execution of work and theoretical instruction in its underlying principles. The practical training can only be gained under commercial conditions in a factory or works, while the training in the underlying principles can generally be obtained best in some form of technical school or college.

This dual character of the training introduces a very vital factor into the organisation of the scheme, since it generally necessitates the participation of two different parties, namely, the employer and the education authority. Perhaps the most difficult problems connected with any scheme of training arise in regard to the proper co-ordination of the work of these two bodies. It is scarcely possible to exaggerate the value of their cordial co-operation in the solution of these problems, which involve questions not only of subjects and methods of instruction, but also of the allocation of time for the purpose.

A satisfactory scheme of training should also act as a means for sorting out the youths who pass through it according to their character and special abilities. Special aptitudes, if discovered early and encouraged wisely, may prove of untold value to the boy himself, to the firm employing him, and to the State. It is only by close co-operation between the staff of the works and that of the technical school that these special aptitudes can first be discovered and then developed to useful ends.

Owing to the impossibility of retaining the essential elements of the old system of apprenticeship under modern industrial conditions, new and more complex systems of training have become necessary.

The modern organisation of the engineering industry into firms of large size and the progress of specialisation almost necessarily annihilate personal relationship between employer and apprentice, and, even where a system of apprenticeship is retained, the direct responsibility of the employer in regard to the instruction of the apprentice is seldom recognised, beyond the provision of opportunities for him to learn

the use of his tools; so that he is generally left to pick up any general information as to workshop methods and processes in any way he can. Unless the apprentice is to be allowed to grow up without the technical instruction which shall teach him "all the mysteries of his craft," this part of his training must be provided outside the actual workshop. Too often it is left to the boy's own initiative to secure or to neglect this knowledge.

#### BRIEF ACCOUNT OF THE USUAL METHODS OF TRAINING.

Let us take first the case of a boy who leaves a secondary school at the age of about sixteen. He may be expected to have a fair working knowledge of elementary mathematics and probably some acquaintance with the elements of chemical and physical science. Two alternatives at once present themselves; he may either go immediately into works as an apprentice, or he may continue his studies at a technical school during the daytime with the view of entering the works two or three years later, after completing the technical school course. If he decides to go into works at once, he will probably seek to develop his technical knowledge by attendance at evening classes.

The most common alternative plans may be indicated briefly in the following manner:—

(i) Two or three years at the technical school, followed by entry into works at the age of eighteen or nineteen.

(ii) One year in works, followed by two or three years at the technical school, and then works again at the age of nineteen to twenty.

(iii) Immediate entry into works with attendance at evening classes.

(iv) Alternate periods of six months in works and at the technical school.

It would be unwise to lay down any one of these plans as being the best for all local circumstances and for all types of boy. The best course for general adoption in any given conditions can only be decided after a careful consideration of all the circumstances by the heads of the local firms and the education authorities.

The boy who leaves an elementary school at about fourteen years of age is usually expected by his parents to begin to work at once, and, since he is too young to be employed at one of the skilled trades, he often has to spend one or two years as an errand or office boy, or at some form of routine occupation, before beginning to learn the use of his tools as an apprentice mechanic or draughtsman. It thus often happens that the lad of fourteen, at a specially receptive stage of his development, is condemned to spend his time at work which is little calculated to improve either his mental or moral character, with results which too often react most unfavourably on his future usefulness and happiness. In order to avoid this very serious waste of opportunity, and to bridge over the gap between the usual school-leaving age and entry on apprenticeship to a skilled trade, special schools, called junior technical schools, or preparatory trade schools, have been established in a number of places.

In general, we must assume that the ex-elementary-school boy will pursue the greater part of his engineer-

ing training in the works during the course of a apprenticeship or its equivalent, and whatever facilities may be provided for him to improve his theoretical knowledge will have to conform to this condition.

Briefly, the usual alternative schemes for securing the theoretical side of his training are:—

(i) Evening classes.

(ii) Classes held in the daytime during certain periods each week, which he is allowed to attend by arrangement with his employer.

(iii) Attendance at a day technical school during six months of the year allowed to certain apprentices selected for their ability and industry.

(iv) Attendance at a full technical school curriculum for a few apprentices selected for special merit.

(v) Some combination of these schemes, of which perhaps the most successful is that in force at the Admiralty Dockyards.

Besides the day and evening courses organised at the technical colleges under the local education authorities, a few of the large engineering firms have established schools for their employees in which they provide and control the instruction. In these cases the apprentices usually attend during certain hours of each week in the daytime and receive pay, as if they were working in the shop.

This plan has, of course, the advantage that the instruction can be directed along the lines which are most immediately useful in connection with the special work which the pupils may have to perform. On the other hand, too narrow a specialisation is to be avoided if results of permanent value are to be obtained.

#### SCHEMES OF CO-OPERATION BETWEEN EDUCATION AUTHORITIES AND ENGINEERING FIRMS.

Among the many useful examples of schemes of co-operation the following may be mentioned:—

(a) Many firms encourage their apprentices to attend evening classes by the payment of fees, award of prizes, increase of wages for successes at examinations, or by giving them permission to come to work at a later hour on the mornings following the classes.

(b) Other firms arrange for their apprentices to attend classes at a technical school on certain afternoons each week, or for a whole day once a week.

(c) A number of firms on the N.E. coast have had in force for some years a very complete scheme whereby apprentices are selected as a result of satisfactory conduct and good reports from the works and the managers of the evening classes which they attend. The selected apprentices attend during the six winter months of three or four years at the local technical college as full-time day students.

(d) In one northern town, scholarships are offered at the technical college to apprentices who have served at least one year of their apprenticeship. The apprentices are allowed to attend at the college for two years after which they return to the works to complete their apprenticeship. The scholarships are awarded partly on the results of an examination and partly on the recommendation of the firm.

(e) The scheme which has worked with valua-

suits for many years in connection with H.M. Dockyards is briefly as follows :—  
Boys become apprentices in the dockyard as a result of a competitive examination at the age of fifteen. An apprenticeship covers a period of six years; attendance at the dockyard school is compulsory, and occupies two afternoons and two or three evenings each week. One of the most important features of the scheme is the system of progressive selection of the apprentices for more advanced training to prepare them for positions of responsibility. A competitive examination takes place each year and decides which are to obtain promotion to a higher grade in the school, which carries with it increased opportunities for study. Further, at the end of the school course apprentices who have reached the upper classes compete for Admiralty scholarships, which give admission to one of the colleges conducted by the Admiralty in preparation for responsible positions in the dockyards. The principle of selection by a continuous system of weeding out from the earliest stages, combined with careful co-ordination of the theoretical and practical work, forms a very admirable example of systematic training, and the scheme has enabled many to rise to the highest positions.

#### PERSONAL PARAGRAPHS.

**M**R. A. L. FRANCIS, who was appointed as the headmaster of Blundell's School, Tiverton, at the comparatively early age of twenty-seven, has announced his intention of retiring at the end of the present year, after forty-three years' service. Mr. Francis is nearly seventy years of age, and he has given up the whole of his adult life to the service of education. Himself originally a Fellow of his college (Jesus College, Cambridge), and the son of a Fellow of St. John's, who afterwards became a judge of New South Wales, he comes of a scholarly family, being, in fact, a descendant of the celebrated Sir Philip Francis of "Junius" fame. But what perhaps is of supreme interest to the educational world is the fact that Mr. Francis is a layman, and was a layman headmaster at a time when it was unfashionable to appoint such to the headships of our great public schools. Such days are now, happily, becoming ancient history, but it is largely owing to the careers of men like Mr. Francis that the old medieval preference for man in orders, just because he was in orders, is passing away. Consequently we regard the careers of such men as very important milestones upon the road of educational emancipation. Perhaps Mr. Francis has not done as much in the field of scholarship—in a narrower sense of the word—as many of famous headmasters have done, but we understand that he has been engaged upon a

new edition of "Liddell and Scott," and he has been invited to help in the revision of the renowned Oxford English Dictionary. His chief work, however, is simply his long career as the head of a great school, and those who know his work there have no need to read encomiums upon him. His success has been the more remarkable in that he became a head after a very short experience as an assistant master, for he spent only two years—at Dulwich College—in learning his profession before he became head of Blundell's. Perhaps great schoolmasters are like poets.

\* \* \*

THE death is announced from Maritzburg, Natal, of Mr. R. D. Clark, formerly headmaster of the Maritzburg High School. Mr. Clark was educated at Edinburgh University, where he obtained the Ferguson scholarship, and proceeded to New College, Oxford. Among his contemporaries at Oxford were Lord Milner, Sir Richard Antrobus, and Sir Charles Lucas. He was a member of the University Council of the Cape of Good Hope, and in co-operation with Mr. Russell, late Superintendent of Education for Natal, founded a system of South African scholarships at Oxford and Cambridge in 1886; it was afterwards developed by Cecil Rhodes under the terms of his will.

\* \* \*

**CAPTAIN RITSON**, Dorset Regiment, was killed on June 17th. He was educated at Sedbergh and Magdalene College, Cambridge, where he held a mathematical scholarship. He was appointed to a mastership at Weymouth College, but resigned his post at the end of 1914, on being gazetted to a commission. He proved a most efficient Company Commander, always cheerful in the most trying circumstances.

\* \* \*

**ANOTHER** schoolmaster who has sacrificed himself for his country is 2nd Lieut. A. F. Botham. Educated at Merchant Taylors' School and Clare College, Cambridge, he became a Wrangler in 1911, and was afterwards appointed mathematical master at Shrewsbury, and later held a corresponding post at Tonbridge School. Mr. Botham was a keen and popular sportsman and played regularly for the old Merchant Taylors' Football Club and Middlesex County.

\* \* \*

**AMONG** those schoolmasters whose sons have recently been killed at the front are Mr. Eppstein, formerly headmaster of Reading School, and Mr. Erlebach, of Birchington. Mr. Erlebach has now lost three of his four

sons, one of whom was a master at Morpeth Grammar School and another was in training for the teaching profession.

\* \* \*

ARTICLES that have recently appeared in the *Hibbert Journal* upon education have been a reminder that the editor, Mr. L. P. Jacks, was formerly a schoolmaster. Those who knew him at that time will remember the effect he produced not only on the school but on the intellectual life of Darlington before Mr. Phillip Wood made its Grammar School the success it has since been.

\* \* \*

MISS A. D. BROWN, who died on June 30th, was the foundress of Westfield College. She devoted the greater part of the wealth that she inherited to philanthropic objects during her lifetime. Thirty-five years ago, when the need for women's higher education was recognised by few of her circle, she became keenly alive to its importance, and founded Westfield College. Miss Dudin Brown has bequeathed to the college a sum of £10,000.

\* \* \*

MISS ADAMSON, the senior mistress of modern languages at Manchester High School for Girls, a sister of Prof. Adamson, died recently. She had been teaching at Manchester for some forty years. She knew something of ten modern languages, and was teaching Spanish, Russian, French, and German.

\* \* \*

DR. A. P. NEWTON, the general editor of the "Imperial Studies Series," came to London in 1895 as a master at Strand School. He was educated at King Edward's School, Birmingham, and Mason's College, where he was a Prizeman. Since leaving Strand School he has been teaching history in the Arts Department of King's College. He is a man who has managed to put in an immense amount of work in addition to his teaching.

\* \* \*

MR. O. H. LACE, of King Edward VII. School, Sheffield, has been appointed to the headmastership of Tewkesbury Grammar School. Mr. Lace has had considerable experience at Wyggeston School, Leicester, under Dr. Went, Bedford Grammar School, and Bournemouth School. He has been an active member of the Assistant-masters' Association and the Modern Language Association.

\* \* \*

MR. A. E. WYRNE, late Scholar and Exhibitioner of Jesus College, Cambridge, has been appointed to succeed Mr. A. L. Francis as headmaster of Blundell's School, Tiverton. Mr. Wyne's appointment is a temporary

one; it is probable that a permanent appointment will not be made until the termination of the war. Mr. Wyne was for some years a housemaster and senior mathematics master at Dover College.

\* \* \*

THE College of Preceptors has issued a scheme for commercial examinations for pupils of about seventeen years of age. The adoption by the college of such a scheme may be looked upon as a sign of its awakening; its adoption was largely due to the initiative, power, and clear foresight of Mr. W. C. Brown. He is a live man, unorthodox in some of his educational tenets, and wide-awake as to the trend of development in education.

\* \* \*

MISS LUNN, headmistress of Brighton and Hove High School, has been appointed headmistress of Shelfield High School in succession to Miss Escott, who is going to London to succeed Miss Paul at Clapham. M. Barratt, formerly headmistress of East Liverpool High School, is leaving the Secondary School Inspectorate to become headmistress of Brighton and Hove High School.

\* \* \*

THE Governors of Oswestry Grammar School have appointed Mr. G. S. Farnie master of the Army Class at Uppingham in succession to Mr. Cawood.

ONLOOKER.

#### CHILD-STUDY AND SCHOOL REFORM.

A MEMORANDUM<sup>1</sup> has been issued by the Child-Study Society on the educational principles upon which future school reform should be based. An introduction to it is contributed by Prof. John Adams, who explains the steps taken by the council of the society in preparing the memorandum. Papers were prepared by experts and discussed at various meetings, and where it was deemed advisable the papers were altered. Finally, the council revised the whole memorandum and arranged it as an appeal addressed chiefly to the Board of Education, to the local education authorities, and to teachers. We print below the practical recommendations arising out of the memorandum, and in addition have space only for one quotation.

"Of all the results of child-study, perhaps the most valuable is the slow but progressive inculcation of the whole teaching profession with a scientific spirit in their work, and a scientific attitude towards the pupils and their problems. Matter taught and teaching methods are no longer exclusively determined by mere tradition or mere opinion. They are being based more and more upon impartial observation, careful record-

<sup>1</sup> Published by the society at 90 Buckingham Palace Road, London, S.W.1. 4d. post free.

nd statistical analysis—often assisted by laboratory technique—of the actual behaviour of individual children."

#### RECOMMENDATIONS.

We urge that the following practical steps be taken:—

#### A. BY THE GOVERNMENT THROUGH THE BOARD OF EDUCATION.

##### I.—Promoting research in education:—

1. By providing adequate facilities and the necessary financial support for such research.

2. By setting up a strong Education Research Board to conduct scientific investigations in education, and to assist and co-ordinate the work of others similarly engaged.

Such Board could be constituted on similar lines to the Medical Research Committee and other analogous Government bodies.

3. By making the results of such research widely known by: (a) Promoting conferences and discussion, specially with the view of emphasising the practical bearings of the conclusions reached; (b) publishing early written reports of such research work, past and present, expressed in non-technical language, with special reference to their practical applications.

4. By encouraging and financially assisting local Education authorities to establish and maintain psychological clinics and experimental and observational schools where problems could be worked out under competent control, and with constant reference to both their educational and medical bearings.

[It is essential that such experimental and observational schools should be under the control of persons who are both educationists and psychologists. The psychological clinics should be under the supervision of medical men with experience both in psychiatry and education.]

II.—Requiring that all training colleges shall include in their syllabuses a definite, practical course in child-study, with laboratory experiments and investigation.

III.—Organising and encouraging summer courses, in which the practice and theory of child-study shall be specifically included.

#### (B) BY LOCAL EDUCATION AUTHORITIES.

I.—Promoting research in education, and the discussion and publication of the results thereof, in co-operation with the Board of Education or otherwise.

II.—Appointing school psychologists to conduct practical investigations, and to give advice and help to teachers.

Such school psychologists to be both educationists and psychologists.

III.—Establishing and maintaining experimental and observational schools.

[See note under A.I.4 above.]

IV.—Including child-study among the subjects for which summer school grants are made.

V.—Making more generous provision for (a) the special needs of the backward child in the ordinary school; (b) the due development of children who are

decidedly above the normal in any special direction or in general mental ability.

#### VI.—Co-operating with the Board of Education.

[See A.I., pars. 2 and 3.]

#### (C) BY TEACHERS OF ALL GRADES AND KINDS.

I.—Making use of and testing the best available (a) norms of performance in such subjects as reading, arithmetic, etc.; (b) mental tests, such as some of the later developed forms of Binet's tests.

II.—Determining and making allowance for (a) the influence of sex, physical conditions, and social status upon the quantity, quality, and rate of their pupils' progress; (b) the special developmental needs of adolescence, with particular reference to any proposed system of compulsory continued education; (c) the need of the fullest possible freedom for individual development; (d) the co-ordinate need for a great extension of expressional work and practical activities, especially for young children and for certain types of older children; (e) still greater attention to the aesthetic, emotional, and moral aspects of development.

III.—Making a close study of those psychological principles and processes which bear most directly upon any special subject or subjects which he or she teaches.

### ITEMS OF INTEREST.

#### GENERAL.

THE University of London Students' Representative Council has passed the following resolution at an extraordinary meeting:—"That the Students' Representative Council of the University of London protests most strongly against the proposal to deprive such a democratic and thoroughly representative body as the University of London of its right to return a member to Parliament whilst the universities of Oxford and Cambridge retain such right; and against the proposal to group the University of London with various provincial universities for the purpose of common Parliamentary representation."

A SOMEWHAT novel scheme of adapting a private garden for educational purposes has for several years been in operation at "Westfield," Reading, with the object of giving teachers and school-children the opportunity of observing and studying plants used in industry and commerce. A number of plots have been laid out by Dr. J. B. Hurry in which are grown a large variety of economic plants. Series A includes plants used in medicine, e.g. eucalyptus, belladonna; series B, plants used for food, e.g. maize, millet, sugar; series C includes plants used for clothing and textiles, such as flax, hemp, cotton; and series D plants that yield dyes, such as woad, indigo, madder. In the adjacent conservatories are exhibited more delicate economic plants, such as tea, coffee, cinnamon, and camphor. Adjoining these conservatories is a small museum in which are collected products made from the above-mentioned plants, every article being accompanied by a descriptive label, so that the living plant can be studied in conjunction with the economic products derived from it. Every summer the garden, conservatories, and museum are thrown open free on

several half-holidays to visitors. A printed catalogue is supplied to every visitor, and from time to time demonstrations of the more interesting exhibits are given by Dr. Hurry and his assistants. In another part of the grounds is an old English herbary, in which may be seen about sixty kinds of herbs, such as in former years were used for potage, salad, simples, scent, or other purposes.

THE third instalment of the contribution of the Master of Balliol to the *English Review* on the education question is published in the issue for July. The places of natural science and modern languages in education are considered, and most reformers will agree with the general principles laid down. While it must be admitted that the article contains a generous tribute to the value of natural science in the curriculum of schools of various grades, the suggested three years' school course of work in science will, we imagine, not meet with much approval from experienced teachers. "In chemistry, instead of trying to cover all the elements, a study may be made (say) of carbon, oxygen, hydrogen. In physics a study of some characteristic solids, liquids, and gases. In botany, the seed, the leaf, the root of particular plants. All this in the first year. In the second year the pupil can be introduced to the subjects of heat, electricity, zoology. In the third year, organic chemistry, physiology, advanced botany. Who will say that each of these subjects is not educational, and cannot each of them be made profoundly interesting in the hands of a good teacher?" These subjects can all be educational at the right time and in the right place; but the Master of Balliol seems not to have acquainted himself with what experience has shown to be a scientific way of introducing pupils to the principles and practice of natural science.

A NOTABLE jubilee was celebrated by Sir John Kirk when he spoke at the seventy-third annual festival of the Shaftesbury Society and Ragged School Union on the subject, "Fifty Years of Child Welfare Work." The London of to-day is a *new London*; it is not a paradise, but the London of rookeries, mud, disease, vice, and ragged children, of the early 'sixties, has disappeared. Sir John remembers the public hanging of five pirates at Newgate. In the new London there are new children; illiteracy is wiped out; there is less cruelty and neglect; it would be difficult to find in London an absolutely homeless child or a child who had not seen daisies grow under natural conditions. The policeman, once the enemy of the poor, has been changed into the friend of the children. A new spirit is also in our midst, quickened by the experiences of the last few months; and this spirit will move others to become, like the Ragged School Union, aggressive dynamic agencies which do not wait for something to turn up, but move forward. The speech is reported in *The Child* for June, which also contains a brief description by Mr. E. M. White of "An Experiment in Practical Civics," by which the children of a Brighton school became aware that "a city is more than a place in space; it is a drama in time."

A RECENT issue of the *School Review* devotes much space to the question of military training in the schools.

Capt. Steever describes the Wyoming plan initiated in 1911. Opposition came from four sources, and the replies of the promoters are of interest. To the schoolmaster they said, "We are going to make the American boy more manly and better material for education"; to the mothers, "We have a moral idea in this work; we are going to encourage non-smoking and clean-thinking"; to the trade-unions, "We are working for national defence, and will have nothing to do with State or a national police force"; and, finally, to the boys, "Now, Mr. Boy, why not go ahead with the national defence game?" The originators carried off all these ideas; in the corps there are no officers, or platoon, company, and other leaders. The organisation is competitive on the games system: high school against high school. Mr. L. P. Ayres, writing "Military Drill in High Schools," asserts that annually about 70,000 boys and young men have received military training for many years, and that the result is an almost unqualified failure. Mr. D. C. Bliss, writing on the same subject, reports that Boston, where compulsory military drill in the high schools for fifteen years, has fewer enlistments in the United States Army than any similar population area. The Wyoming plan is heartily endorsed by many writers. The whole discussion emphasises the editorial remark: No one knows the future. If, when peace comes, future war is to be made impossible, those nations which now have a powerful will have a powerful voice. Against the time it will be highly becoming for the United States to have a military establishment ready for use, or ready for the scrap-heap when assured world-peace comes.

EDUCATION is at once respected and suspected, for education protects the past even as it secures or mortgages the future. It faces the task of reconciling the older and the newer order. These statements form the keynote of a thoughtful article, "The Democratic Suspicion of Education," by Mr. J. Jastrow, of the University of Wisconsin, in the *Educational Review* for May. Nowadays it is not the dead hand of the past that stills the voice of the scholar, or saps the vitality of his utterance, but the mailed fist of the present. The native human fitness is for doing things, changing the face of Nature is a human specialty. That the many pursuit of knowledge is a vanity, and hence the estrangement between the doers and the thinkers, which it is one purpose of education to reconcile. Scholastic sterility is the historical justification for the suspicion which a democracy may hold of education; but in America this plea will not serve; the new universities have avoided that difficulty by the range of their outlook. Yet suspicion remains, for the practical mind is strangely inconsistent; it appreciates the benefits of science, and gives thanks for the practical utility, for example, of the automobile, but there the matter ends. Of the intellectual supports of science, the depths of its foundations, the immensity of its scope, of the world and the life which it expresses, and the consecration which it imposes, there are but vague notions. Hence the trained thinker may be a useful clerk, but may not be invested with authority; an education is hampered by the democratic view that a one man is no better than another, so is one study a

as another. The *successful* professor, then, must add the practical element to his course and double his remuneration; half-baked theories are advanced and only indigestible conclusions swallowed. But the mark of the trained thinker will disappear in the face of industrial expansion; larger experience will restore former balance between men of ideas and men of acts.

DR. M. JANE REANEY foreshadows important developments in "The Training of Play Leaders" in the *British Educational Supplement* for June 28th. In America the play movement has made considerable strides; at home, up to the present, activities have been limited to a few areas and to the establishment of evening play centres, vacation play schools, and playgrounds. Here and there supervisors have been appointed to organise these activities, and the movement is gaining ground that the play must be in the hands of leaders who understand the psychology of play and have had practical experience in utilising their understanding. This practical experience involves knowledge of the games which appeal to children of different ages and ability to secure such playgrounds as will permit the play to yield beneficial results. Broadly speaking, play is experimental between the ages of one and three, imitative up to seven, imaginative and individualistic from seven to twelve, and from twelve onwards co-operative. Dr. Reaney locates a definite course of training which shall make an apprenticeship under responsible play leaders. The Board of Education gives grants for playgrounds and has appointed an inspector to administer regulations.

A STRONG argument for the raising of the school leaving age and the establishment of some form of effective post-school supervision, with particular reference to crime, is provided in an article on "Adolescent Moral Disinclination," by Mr. F. M. Giles, in the *School Review* of Chicago. From many sources statistical data have been obtained and the result of their collation shows that between the years thirteen and sixteen is a period when the youth, especially the boy, tends to break away from restraint and make a trial of his newly felt powers in new directions and combinations. The information on which the conclusion is based comes from secondary-school pupils in Italy and America, official statistics on juvenile crime and unofficial statistics dealing with the age at which religious conversion occurs. The net conclusion is that disinclination during this critical period is in a different category from that, nominally of the same type, which occurs in later years. In fact, the situation may be summarised thus: at the early period the boy is non-social and non-moral, and it is the function of the schoolmaster as the representative of society to make him both moral and social.

THE length of the penholder is under discussion throughout the schools of South Australia. Experiments have been made with shortened penholders for small pupils. Some of the results are reported in the *Education Gazette* of South Australia. The general opinion seems to be that penholders should be

about  $3\frac{1}{4}$  in. in length. As a first experiment, only 1 in. was cut off the usual-sized penholder. This was followed by a second reduction of another inch with beneficial results. The children hold the short pens with greater ease, they sit better, they make more rapid progress, and there is immediate improvement. Further experiments are in progress. Can it be that the traditional and inevitable whittling down of pens and pencils by children of all ages represents something more than mere wanton destructiveness? How many adults who use fountain-pens habitually discard the cap of the pen for more convenience in use? What is the percentage of preference for stubby pens among secondary-school pupils who have full freedom of choice as to the size of penholder they use?

#### SCOTTISH.

THE annual meeting of the School Boards Association was held this year in Edinburgh. The Rev. Dr. Smith, Partick, who has been president of the association since its formation, occupied the chair, and delivered an address which was largely a defence of the *ad hoc* authority in education. On this question teachers and school boards are at direct issue. School boards naturally object to being called upon to efface themselves, and so they ransack the whole field of principles and precedents to find arguments for their continued existence. One all-powerful argument they cannot, as a class, lay claim to—the high quality of their past services to education. The present deep unrest in the teaching profession is almost entirely the result of the soulless treatment teachers have all along received at the hands of the small school boards, which constitute by far the larger number of school authorities. Dr. Smith made out a very clever case for school boards from the theoretical point of view, but teachers and the public, with an eye on past works, are not to be beguiled.

THE movement for improved salaries has spread to the training colleges, and an association of students has been formed to secure a minimum commencing salary of £80. Already about 80 per cent. of the students have joined and pledged themselves to accept no post at a salary below this minimum. This movement originated and developed with the students themselves, but the Educational Institute, on being appealed to, gave it hearty approval and promised to come to the help of those students who were unable to secure posts. The prospective teachers are not desirous of taking advantage of this offer save in the last resort. They are looking out for other work for those of their members who are unable to obtain posts at £80, and in view of the demands for all kinds of women labour there should be no difficulty in obtaining for them more remunerative work than teaching. Many of those who thus find employment will not return to teaching, and so the existing scarcity of supply will be intensified.

THE rector of Ayr Academy is responsible for raising a nice point in professional etiquette. He has refused to grant testimonials to those of his former pupils

who are in attendance at the training colleges unless they sign the pledge in regard to the minimum commencing salary. The school managers have passed a resolution censuring the rector for allowing extraneous questions to influence his granting or withholding certificates, and declaring that his action "is entirely unworthy of the best traditions of the teaching profession." Teachers will not be inclined to pay much heed to school managers' opinions in regard to the traditions of their profession. Education authorities have paid but small consideration in the past to many of the best traditions of the profession, and they pose now as defenders and exponents of these traditions merely because it suits them to do so. But it must be admitted that the position taken up by the Ayr rector, conscientious and fearless as it undoubtedly is, is a debatable one. On one hand it may be contended that unless the teacher be allowed the fullest independence in the giving or withholding of testimonials and in regard to the contents thereof, his appraisements are valueless; on the other there is much to be said for the view that teachers should grant testimonials solely on the basis of relevant facts and without regard to political, professional, or social shibboleths. The question, however, is a nice one, and an expression of opinion from the readers of these columns would be welcome.

FROM an answer by the Secretary for Scotland to Sir E. Parrott, it appears that of the 947 school boards in Scotland, 771 have agreed to pay war bonuses to their teachers during the present year, while 176 have so far refused to do so. These boards have persisted in their refusal, despite the strong recommendation of the Education Department in favour of the bonus, and the promise from the Treasury of half any bonus awarded. If, as is feared, the Secretary for Scotland tries to run the new grant on similar lines, leaving its distribution to the good sense of school boards, he will do so in the face of this partial failure and against the repeated warnings of the teaching profession. Only stern, unbending compulsion makes appeal to the small school boards of the baser sort.

THE success of Sir E. Parrott in obtaining information from the Secretary for Scotland on educational topics has led other members to become anxious inquirers, and Scottish education has for some weeks past figured prominently at question-time in the House of Commons. Mr. Holmes was fortunate to secure from the Secretary for Scotland the declaration that it was his intention, during the present session, to introduce a Bill dealing with education in Scotland. The Bill would be introduced not for the purpose of passing it this session, but in order to give an opportunity to the people of Scotland to consider its provisions. The future progress of the measure will doubtless depend on the reception it is given, but if the Government intends to delay until general unanimity on the subject is reached, the Bill may be regarded as already dead.

THE new regulations for grants to secondary schools in England have just been issued, and there is much

speculation in educational circles in Scotland as whether an equivalent sum is to be paid to second schools there. In England the grant is to be increased by £2 a head, while the age at which it becomes payable is to be eleven instead of twelve. In addition smaller secondary schools, which can prove necessary, may have the £2 grant increased by a lump sum exceeding £350. Certainly Scottish schools are quite as necessitous as those of England, and we may confidently look to the Scottish members of Parliament to safeguard the interests of higher education near the Tweed.

At a meeting of the Scottish Teachers' Joint Committee for War Relief, it was intimated that amount subscribed to date was £44,368, of which £20,175 was for the benefit of teachers and their dependents. The charges on the latter fund already amounted to £1,000 annually, and it is evident that the calls upon it will increase at an accelerated rate as the days pass. The fund should make a strong appeal to every teacher in the country, especially the male members who have been allowed to remain at home in comfort and safety while their professional brethren have been risking life and limb for King and country.

THE minute for the allocation of the new equivalent grant has just been issued. This year a sum of £350,000 is to be expended on increases to the salaries of teachers, while in subsequent years the total sum for this purpose will amount to £400,000. This sum will represent approximately a £20 *per capita* increase for all teachers in Scotland, and school authorities are asked to prepare schemes showing how they propose to allocate the money.

#### IRISH.

THE Rules and Schedule containing the Programme of Examinations for 1918 prescribed by the Intermediate Education Board were published in the first week in July. This date is inconveniently late for managers of schools, but it was generally supposed that the delay was due to an attempt to compound the differences between the Intermediate Board and the Department of Technical Instruction concerning the examination in experimental science. It is clear that no *modus vivendi* has been discovered satisfactory to both sides, and the inference may be drawn that the Government, which sanctions the rules, supporting the Intermediate Board in continuing the written paper. Mr. Boland, M.P., has, at the time that this note is being written, raised an objection in the House of Commons to this particular rule, but it remains to be seen whether the objection will be maintained and what will come of it. Whatever the authorities may decide, the schools as a whole will remain dissatisfied with a position in which one body prescribes the programme and inspects the classes, while another body conducts, through its examiners, a written test of the work which is largely practical.

THE rules otherwise contain only one noteworthy point. Once more a pass in all three mathematic-

jects, viz. arithmetic, algebra, and geometry, is compulsory for boys in the junior grade, while in the middle and senior grades boys must pass in arithmetic, algebra, and either geometry or trigonometry. The Board is here reverting to an earlier practice, but it is clear that the members find it hard to make up their minds to a definite policy in mathematics, and are wavering between harder and easier conditions. When they omit geometry they are conscious that critics will say that no boy should be able to pass examinations without learning it; when they keep it in, other critics will maintain, with some force, that the conditions are unfavourable to the student who is weak in mathematics. May one suggest to the Board that a way out of the difficulty would be to combine all these subjects, and have one or two papers in mathematics on which questions could be set in all three or four subjects as in many English examinations? A boy would then neglect one of the subjects at his peril, while he would be compelled to pass, even if weak in one of them. A second suggestion is suggested by this rule. One objection to the written examination in science was that it made the examination more difficult. This rule about mathematics seriously increases this difficulty. Did the Board sufficiently consider this point?

One or two other points in the rules deserve a passing word. The conditions of passing for girls (Rule 32) are either incomplete or absurdly easy as compared with those for boys, there being six essential subjects for boys (with certain exceptions), and only five for girls. In Rule 56 the Board extends its section to the adequate accommodation for pupils in a school, and prescribes penalties for the wilful publication of any confidential information supplied to the manager of a school.

In the syllabus of examinations the Board develops, in our opinion to an exaggerated degree, its policy of prescribing selections. This is not sound when the selections are not contained in any good edition ready published, as the result is a book hurriedly selected and published during the vacation to catch the market. It surely ought to be possible, for example, to find selections of English verse suitable for schools contained in one of the many published anthologies. But what is one to say of a selection of Virgil containing two passages from the "Bucolics," one from the "Georgics," and six from the "Æneid"? These are not, to our knowledge, contained in any annotated selection. Pupils will be introduced to this latest of Latin poets in a few snippets hastily annotated and printed for the intermediate examination. This will give them a satisfactory idea neither of the poet nor of the editing of a great classic. It is certainly no improvement on the prescribing of a single book. In modern languages free composition is introduced through all the grades, and in the geography courses a new departure is made by introducing different portions of the spheres of operations in the great war now raging.

MR. DUKE is still silent, although he may say something when the Irish Education Estimates come

forward, as to Ireland's share in the new educational grants. There will be a feeling, not limited to schools and teachers, of general dissatisfaction if not of despair, unless generous reforms are taken in hand soon. The Senate of the Queen's University, Belfast, has adopted the following report of its education committee: "That this committee is convinced that the time has come for a thorough reorganisation of secondary education in Ireland: (1) in order to improve the tone and character of education by limiting the pressure of examination, and giving, subject to proper superintendence, greater freedom to the teachers and managers of schools; (2) in order to raise the status and add to the remuneration of secondary-school teachers, so as to attract able and highly trained persons to the profession; (3) in order to obtain a close co-ordination of primary and secondary systems of education by placing them under one control. That to secure these ends much larger financial provision for education should be made by the State, and that the grant to Ireland should be proportionately equivalent to that which is proposed for England and Scotland." Sir Samuel Dill, in submitting the report, said that the Irish system of secondary education was far more in need of radical reform than that of Great Britain, and had even stronger claims for largely increased grants from the Treasury.

WHAT has happened to the registration of intermediate teachers? The Registration Council in May asked the Government to receive a deputation to discuss certain points of difference between them, but up to the present the Government has done nothing. Teachers attach great importance to registration, the points at variance did not concern fundamental principles, they have nothing to do with politics, and they could have been settled without delay. What is the cause of the Government's silence?

THE Senate of the National University has published a resolution that candidates entering for the senior grade intermediate with the view of matriculating in the University upon the results of the examination are advised that they should enter provisionally for the autumn matriculation examination of the same year, pending the results of the senior grade examination.

THE summer courses of the Department are being held this year as usual. The total number of students, including those at provincial centres, is 481. Of these 214 are in the Royal College of Science, 82 in the Metropolitan School of Art, and 23 in the Irish Training School of Domestic Economy. The others, 162 in number, are at provincial centres, viz. 62 studying experimental science, 15 natural science, 20 drawing, and 65 domestic economy.

THE Department has issued rules and regulations for the awarding of scholarships for the coming session in agriculture, horticulture, forestry, and creamery management, tenable at the Albert Agricultural College.

## WELSH.

THE chief educational topic of the month is the conference to be held at Llandrindod Wells on August 2nd and 3rd. The conference, which is convened by the Central Board, will be attended by representatives of elementary and secondary education authorities and of teachers' associations. The following suggestions have been issued as a basis for discussion :—

(a) That, without prejudging in any way the question of the control of university education now under consideration by the Royal Commission, the conference is of opinion that a national council of education for Wales should forthwith be constituted, exercising complete control over elementary, continuation, and all forms of secondary and technical education in the Principality, and vested with all powers relating to those forms of education in Wales now exercised by the Board of Agriculture and Fisheries, the Board of Education, the Central Welsh Board for Intermediate Education, the Secretary of State for Home Affairs, and by any other departments concerned with education in Wales.

(b) That, pending the grant of complete autonomy to Wales, the National Council of Education be a body of, say, ninety-five members, elected by the authorities at present controlling the above forms of education in Wales, in accordance with the scheme to be hereafter formulated, such scheme to include provision for the due representation by co-optation or otherwise of (1) women, (2) teachers, and (3) other persons versed in all forms of education.

(c) That the National Council be given power in administering Imperial grants to take into consideration (*inter alia*) the amount expended annually by each authority out of the rates in respect of all or any forms of education, and to make such regulations as it may think necessary or desirable relating thereto.

(d) That the conference directs attention to the disparity in the respective education rates in England and Wales, and requests the Central Welsh Board and the Welsh Members of Parliament to bring the claims of Wales for increased Exchequer grants on the basis of local effort, combined with local ability, before the Board of Education and the Treasury.

(e) That this conference strongly deprecates any diminution in the degree of popular control over university education at present obtaining in the Principality, rejoices in the disposition of certain county councils to levy an additional rate in order to free the colleges, and regards as reasonable their stipulation that increased and direct control be given to representatives of local authorities.

(f) That all fees, both in secondary schools and university colleges, be abolished, and that the educational facilities provided in each locality shall, so far as may be practicable, be made uniformly adequate and efficient.

These suggestions will certainly meet with criticism from teachers, who will surely not be satisfied with representation by persons chosen by the education authorities, but will demand direct representation by members of their own body; they will also require that any measure of autonomy granted to Wales shall be compatible with security of rights as to salaries, pensions, and tenure for teachers migrating to or from Wales.

THE ninth annual summer school at Aberystwyth University College presents some interesting and novel

features. In addition to courses in geography, English and Welsh literature, rural science, art and handwork, and the principles of teaching, there are courses in library work and the principles of accounting. The inaugural lecture, on the library service as university work, will be delivered by Sir William Osler, Regius Professor of Medicine at Oxford. A strong feature of all the courses is their special reference to the problems that face the teacher in class-room.

THE treatment of teachers at Cardiff continues to be unsatisfactory. After ostensibly closing the Hays School inquiry, the education committee has gone back on its findings by issuing a further report, reflecting on the staff, whom it had previously included in the statement that no one was to blame. And the case of Mr. J. E. Edmunds, the teacher whose removal from the library committee was noted in this column months ago in this column, is still the cause of contention. Mr. Edmunds, who is secretary of the Trades Council, is, together with three other teachers, accused of unpatriotic sentiments and teaching. The four teachers were asked to sign an undertaking not to teach anything contrary to the spirit of patriotism, and when they did so everyone supposed the case was closed. But now the members of the education committee are engaged in wrangling among themselves as to whether the teachers should be dismissed notwithstanding their undertaking. The fact is that Cardiff teachers, both elementary and secondary-school, have in former years shown themselves to be a powerful factor in the political life of the town, and the politicians are engaged in "getting a bit of their own back" from those who did not cringe to them, and who had not the inclination to escape intolerable conditions. It is high time that "public men" were reminded of the fact that a teacher is a citizen and often a ratepayer, and does not lose his rights as such because he is also a teacher. The matter has been taken up by the Trades Council, the South Wales Miners' Federation, and other bodies, one meeting of colliery workmen describing the councillors' action as "Hunnish." It is interesting to note that Mr. Edmunds volunteered for miners' sweeping service, but was rejected on medical grounds.

THE Gorsedd, or session of the Bards of the Isle of Britain, to proclaim the Eisteddfod of 1918, was held at Neath on June 28th, with the traditional picturesque ceremonies, Dyfed, the Archdruid, expressing the hope that before the Eisteddfod was held the Kaiser would be dethroned and an everlasting peace proclaimed.

MUCH interest has been aroused in Wales by the winning of the public schools gold medal of the Royal Asiatic Society by A. M. Davies, of Bishop Stortford College, the son of the Permanent Secretary to the Welsh Department of the Board of Education. Sir James Douie, who presented the medal, described the essay on the Sikhs and their history, for which it was awarded, as a brilliant piece of writing.

SWANSEA is determined to have its Technical College incorporated with the University, even if in order to do so it is necessary to establish a faculty of arts. A sum of £70,000 is to be spent on extending the present buildings.

THE new buildings of Cardiff Technical College have been handed over by the contractors. The total cost was £45,000, a very small increase on the original estimate of £43,859. Since September of last year 189 men of the Royal Flying Corps have been trained in turning and fitting at the college. It is proposed to institute degrees in technology and commerce, for which the college will afford preparation.

Mrs. H. S. BERRY has given £10,000 to the Merthyr Vale Education Committee to found, in memory of her late Alderman J. M. Berry, a Technical Institute, to be open without payment to all the boys of the town.

LANELLY County School Governors have decided to vote the whole of the extra grants for 1916-17 to augmenting salaries. The result will be a permanent increase of 30 per cent. English teachers who may be anxious on reading this news should note that at present Welsh salaries are, on an average, about £20 per lower than those in England.

## BOOKS FOR THE TEACHER'S LIBRARY.

- (1) *Janus and Vesta: a Study of the World Crisis*. By Benchara Branford. 316 pp. (Chatto & Windus.) 6s. net.
- (2) *German and English Education: a Comparative Study*. By Dr. Fr. De Hovre. 108 pp. (Constable.) 6d. net.
- (3) *Higher Education and the War*. By John Burnet. 238 pp. (Macmillan.) 4s. 6d. net.
- (4) *Mechanisms of Character Formation*. By W. A. White. 342 pp. (Macmillan.) 7s. 6d. net.
- (5) *The Psychology of the Organised Group Game*. By M. J. Reaney. 76 pp. (Cambridge University Press.) 5s. net.
- (6) *Studies in Education*. By M. W. Keatinge. 195 pp. (Black.) 5s. net.
- (7) *Herbert Spencer*. By Hugh Elliott. 330 pp. (Constable.) 6s. net.
- (8) *Sadoletto on Education*. By E. T. Compagnac and K. Forbes. 141 pp. (Oxford University Press.) 6d. net.
- (9) *Mary Astell*. By F. M. Smith. 193 pp. (Oxford University Press.) 6s. 6d. net.
- (10) WE heard the remark some time ago that Mr. Branford, the author of "Janus and Vesta," had written a clever book. The remark was, we fear, hollow and almost insulting. Mr. Branford has written a profoundly significant book, to which we propose to do fuller justice on a future occasion. It is no means easy reading, and it needs, as he hints, to be read forwards and backwards, to which end each chapter has been made a whole in itself, as well as a part of a larger whole. It comprises "an analysis of the present world crisis viewed in relation to the political and philosophic history of mankind," and the lesson is justly made that "educational statesmanship is searchingly reviewed, and the future hope of the world is suggested on the broadest lines of spiritual

interpretation." The book contains a mass of facts and a rich accumulation of slowly gathered wisdom. From cover to cover there is not, we believe, an ill-considered sentence or a superfluous word. Mr. Branford shows how our stricken world may yet enter upon a new era, wherein, labour and woman having been admitted "in East and West to the counsels and councils of the mighty," "manly justice shall be tempered with womanly compassion, hard ambitions softened by humaneness, rights and privileges go hand in hand with duties and responsibilities." If our efforts at reconstruction are to bear the best fruit, we must noble visions now, and Mr. Branford helps us to see them. As we have said, we hope to return to the book at a later date. This brief notice is meant only to intimate to our readers that in our opinion it is a book to be reckoned with.

(2) Dr. De Hovre, of the University of Louvain, has rendered English educators a great service by producing, during his residence in this country, his monograph on "German and English Education." We have books enough which set forth the characteristics of German schools of various types, and establish external comparisons between German and English schools. But when the question is asked, What is behind it all? some of the writers are silent, and others nebulous. It is exactly here that Dr. De Hovre comes to our assistance. Realising thoroughly that you cannot understand education when you isolate it from the rest of a nation's life, he deals first with "the soul of Germany" and "the soul of England." The former he finds in *Kultur*, the latter in civilisation. The one is strictly national, the other embraces humanity; the one is based mainly on intellectual development, the other mainly on moral culture; the one ministers only to the State, the other respects the whole hierarchy of social institutions—family, society, nation, State, Church; the one implies that the individual gets his value from the nation and the State, the other that the individual has absolute value. The writer goes on to show how these essential differences work out in the respective educational ideals and systems, and he concludes by showing, what it would be a cardinal blunder for us to ignore or forget, that each nation has a great deal to learn from the other. To English teachers we would say: Whatever books you have read about German education, do not miss this one.

(3) More extensive in its range of treatment, and equally suggestive in its analysis of national ideals, is Prof. John Burnet's book on "Higher Education and the War." Prof. Burnet writes as a Briton who knows well not only the higher education of his own country, but also that of Germany. He first deals with the conception of *Kultur*, showing what it is and what it is not, and tracing some of its practical consequences. He then goes on to point the contrast between a narrowly national *Kultur* and a broadly human civilisation. He describes the higher education of Germany, not neglecting, as British and American appreciators have been apt to do, its seamy side. On points of fact he is here able to correct and bring up to date our English sources of information; such as J. E. Russell's "German Higher Schools." Some of the most striking and important passages in the latter part of the book are those in which Prof. Burnet shows that the question of age is fundamental, and supplies us with the chief test by which all educational arrangements are to be judged. It is well known that on the Continent general education ceases with the secondary school. The university is given up entirely to specialism. "This does not mean, as some people suppose, that our universities are doing school work; it only means that we think it better to teach

young men from eighteen to twenty-one in the universities and not in the schools. It would be much more true to say that the French and German schools are trying to do college work." Let anyone who knows young men (and we in this country should add young women) try to realise the meaning of this passage. Prof. Burnet's book makes salutary reading for the British croaker.

(4) The volume on "Mechanisms of Character Formation," by Dr. W. A. White, an American writer, will be found useful to any teacher who desires an introduction to "the psychology which is called psycho-analysis, and, no matter what the remote history of events preceding its birth, properly bears also the name of its real creator, Prof. Sigmund Freud, of Vienna—Freudian." The older psychology leaned in the direction of metaphysics, and the newer psychology leans "in the direction of a refined physiology." The psychology here expounded had its origin in the attempt to help the mentally ill. It will no doubt make its primary appeal to the medical world, but its adherents believe that it is destined to a much wider field of usefulness. Dr. White's presentation makes the subject as clear as its nature permits, and his book is to be recommended.

(5) "The Psychology of the Organised Group Game," by Miss M. J. Reaney, is a thesis prepared for a doctor's degree, and is published as a monograph supplement to the *British Journal of Psychology*. Miss Reaney reviews and evaluates the different theories that have been suggested to explain the play impulse in animals and men, and goes on to show that the organised group game appears only in races which have reached a certain stage of development. She attempts to show that the organised group game in modern times can be explained on the lines that it has been evolved to satisfy the baulked dispositions of a warlike race under the conditions of civilisation. Miss Reaney has done her work industriously, thoroughly, and with obvious insight. In the academic sense her performance is undoubtedly meritorious, and it will have an interest for those readers who like solemnly marshalled evidence in support of conclusions which they had before accepted and acted upon.

(6) Those of our readers who know Mr. Keatinge's writings on the teaching of history and on educational psychology are not likely to miss reading his new volume of "Studies in Education." He is always interesting, and, to use a word the vogue of which he has done much to increase, he is always "suggestive." An introductory study of "aims in education" leads on to a useful and telling treatment of the biological aspects. Many readers will here thank him for his clear and succinct statement of modern theories of heredity and their bearing on education. Equally timely is his study of the æsthetic aspect of a true education—a subject which is expanded and illustrated in the subsequent chapters entitled "Social Needs and the Curriculum" and "What is a Liberal Education?" Later chapters expose current fallacies with regard to the freedom of the pupil and the cultivation of imagination. Mr. Keatinge wonders who reads his books, seeing that the "average academic mind" is not interested in the study of education. Our own experience of the average academic mind, especially perhaps of the Oxford type, is that it is apt to pride itself on its total lack of interest in everything outside its own speciality. Mr. Keatinge may take much comfort in the thought that he is likely to have many readers among school teachers and training-college students.

(7) Readers of Herbert Spencer's little work on education (and there are still many among teachers) are apt to feel that they could understand him better if they knew more of his philosophical position. Yet

they are not prepared to face his eighteen large volumes of philosophy and science. Such readers, to speak of those who are otherwise interested in development of modern science and philosophy, should be recommended to turn to Mr. Elliott's able and discriminating summary of Spencer's imposing system of thought. The time had come for doing justice to this singular figure among the "makers of the nineteenth century," and we think that Mr. Elliott has done it. If Spencer was over-estimated in his day, we of the twentieth century are certainly inclined to under-estimate a man who, after all, "led the chief controversies on evolution and biology without ever having received any tuition in those subjects," made an important contribution to psychology, founded the science of sociology, was the philosophical exponent of Liberalism, and stirred the stagnant waters of educational thought."

(8) It was little less than a brave act, on the part of both of translators and of publishers, to produce, in the present turmoil, an English rendering of a work—"De pueris recte instituendis"—written by an Italian scholar and educator in the early part of the sixteenth century. What was to be the attitude of the XIX? Learning towards a Church sadly in need of reformation? Sadoleto was of those who hoped to find in it "a cure for the troubles of their time; to reconcile Christian ideals with Hellenic culture, and direct the lives of individuals by a scheme of education in which physical and intellectual training should balance and enhance the value of moral and religious discipline." Such is the keynote of this fine old book. Every page of this edition bears the hall-mark of sound scholarship, and will be welcome wherever the history of education is taught or otherwise cared for.

(9) The recent activities of women have naturally turned the attention of students of educational and social history to the pioneer defenders of the rights of women to the utmost development of their minds and the utmost use of their powers in the service of the community. Prominent among these pioneers is Mrs. Astell, of Chelsea, long known rather for her personal relations to writers like Swift and Defoe than for her educational and feminist propaganda. The object of Miss F. M. Smith's monograph, which bears the *imprimatur* of Columbia University, is "to formulate some of the seventeenth- and eighteenth-century ideas for women as they presented themselves to a woman of the period, and conversely to show how her statement of them reacted upon the thought of the time." The several chapters expound and illustrate this remarkable woman's views on education, marriage, religion, and politics. It was a curious period in the history of womankind, and this book should prove interesting not only to the student of educational history, but also to the general reader.

## RECENT SCHOOL BOOKS AND APPARATUS.

### English.

*Godwine*. By James F. Waight. 123 pp. (Macmillan and Unwin.) 1s. 6d.—This tragedy is the second of a trilogy, "Swegen" having already appeared, and "Harold" being promised. The writer, who apparently believes in the Godwin family, intends to show that foolish opposition to the true patriotism of the great earl delivered this country into the hands of the Conqueror. In the present play it cannot be said that Godwin plays a noble part, though, as to his share in Alfred's shameful mutilation and death, there are considerable doubts, the late Prof. Freeman being

better. But all this has little to do with Mr. light's verse. We are ashamed to say that we had not heard of a previous play, and did not know of the sense of this dramatist among us. For dramatist is, "without doubt," as he would say. Let us make our one and only complaint. Even to one who knows ordinary Anglo-Saxon, there are many words which cry for explanation. We have no objection to *the, mittans, mought, carls, sceat, or waget;* they are within ordinary reading. But it is not so with *skinker, quapping, dool, deinous, clum, hordere, ring, raven's leek;* and all these fourteen are in the first act. Even if the writer wishes to bring many of these words into use again, it were best to add a note here and there. No doubt the words are in the "Saxon Chronicle" and contemporary work, but people who would like to read the tragedy do not generally know the good old words that are dead. But the poetry there seems to be no mistake whatever. Quite apart from the story, Emma's hateful character, Godwin's subtlety, Alfred's innocence, and the rest, the play holds one from start to finish. There is no sinking in it at all, and everything moves with passages of the grimmest wisdom and deep pathos to the final tragic close. And apart from a couple of short phrases, the play borrows from none; neither the thought nor the verse is reminiscent of Shakespeare or of any other poet. It is original work, and through it, not once or twice, nor even many times only, run golden lines.

*Shakespeare Criticism.* With an Introduction by D. C. Smith. 414 pp. (Oxford University Press.) £1.3d.—The selection of criticism here given begins with Heminge and Condell, and ends with Carlyle; a full introduction criticises the critics. Bishop Butler says somewhere that it is a good thing to know what our enemies have said of us; and, considering, as the author admits, that the criticism of the present century regards Gervinus and Bradley as "back numbers," it is not surprising that we do not have served up to us the impossible Rymer. No one quite knows how much the constant eulogy of certain writers may account for the neglect of these same writers by the general, even by the reading, public. Shakespeare has always had his detractors; why may we not hear their words in *Antony and Cleopatra?* If Carlyle be right in saying that each generation interprets its Shakespeare afresh, then the previous criticism is useless or it should be entirely represented. The answer will be that Jonson and Dryden are here; that is true, but the general object of the book is to utter an alleluia of praise. It was a good idea to give us so much of Morgan's "Essay on Falstaff"; but the ordinary man of the street might have been quoted from Pepys and other writers. One rises from a re-perusal of these famous critics with the feeling that Lamb and Coleridge may, in inspired moments, have something to say to us; the rest, except as eulogists, do not touch Shakespeare. He lies, as a French critic says, withdrawn from us at a mysterious distance. The twentieth century has begun to make its own attempt to pierce the veil; it is not too much to say that the newer criticism will be much more startling than the old. Shall we ever again say with Landor, "Glory to thee in the chest, thou confidant of our Creator"?

### History.

*A Graphic History of Modern Europe from the French Revolution to the Great War.* By C. Morris and L. H. Dawson. 359 pp. (Harrap.) 5s. net.—This book provides a popular sketch of the last century of European history. It confines itself to the

leading events of the period, but these it describes in some detail and in picturesque style. There are seventeen full-page illustrations which serve to adorn the book, though it cannot be said that they add anything to the elucidation of its subject. The ordinary, uninformed newspaper reader will find in this well-printed volume much interesting information which will help him to understand some of the main features of the modern problems of European politics. The careful student, however, will do well to accept the judgments of the authors with caution, and to verify from other sources their statements of facts. On one hand they do not always see both sides of a question—e.g. the French Revolution; on the other they make many slips in detail. For instance, in the first chapter they speak of the Holy Roman Emperor as "Emperor of Austria" and "Emperor of Germany," neither designation being correct; they call Belgium a kingdom in 1792, and Venice a dependency of Austria before the outbreak of the Napoleonic wars; they say that the States General refused "to vote a penny," and that the Third Estate broke loose from the other two and established "a separate parliament"—a statement which obscures the fact that nearly one-half of the Estate of the Clergy, as well as a fraction of the Estate of the Nobles, joined the Third Estate in the constitution of the National Assembly. Apart from matters of opinion and matters of fact, there are also matters of style that purists might criticise. The description (p. 6) of the French Revolution as exploding like a bomb, with the armies of Napoleon following on its heels and scattering its seed, is one which presents a fine variety of metaphor compounded from the animal, vegetable, and mineral kingdoms.

*The War and the Nation.* By W. C. D. Whetham. x+312 pp. (John Murray.) 6s. net.—Mr. Whetham, well known both as an eminent physicist and as a thoughtful student of current affairs, has written in this volume before us an important contribution to the constructive politics necessitated by the problems raised during the progress of the present war. He approaches the questions of the day from a novel position, viz. that of a Tory-Socialist. He is a Tory in that he "regards the State with its ancient institutions as a living complex organism, ever developing to meet the growing needs of a changing time and working in harmony for the good of all." He is a Socialist in that he advocates wide extensions of governmental activity in the time to come.

He subjects the old political parties with their catch-words and their programmes to a searching and destructive criticism, and urges emancipation from their thralldom. He shows how the war has opened up ways of escape, and demonstrates the necessity of our following them if we are to avoid disaster. He touches many old and controversial themes—e.g. tariff reform and land nationalisation; but he deals with them in so fine a spirit, with so keen an intelligence, and with so marked an absence of bias, as to lift them high above the dust and din of ordinary political wrangling. A few of his leading arguments and conclusions may be indicated. As to the general doctrine of *laissez-faire*, he agrees that economically it is unimpeachable, but he contends that, as life is more than wealth, there are certain "key-industries" which must be maintained irrespective of whether they do or do not pay dividends to their promoters. Prominent among these vitally important occupations he places agriculture, and he discusses at length the organisation which is required to keep it in vigorous activity. He favours a guaranteed price of wheat and a fixed minimum wage for the labourer. He does not, however, favour the proposal to nationalise the

land. As to the coal-mines, railways, and canals, he takes the opposite view, and urges the desirability of placing them directly under the authority of the State. He makes many valuable suggestions concerning the reform of education, the encouragement of research, the development of the Post Office, and the readjustment of taxation. The book is full of detailed information on all sorts of matters of insistent importance, and no one concerned with the question of reconstruction after the war can afford to ignore it.

*Epilogue to Green's "Short History of the English People."* By Alice Stopford Green. xxxv+229 pp. (Macmillan.) 2s. 6d.—This little volume is nominally part v. of John Richard Green's "Short History," recently reissued in a cheap and enlarged edition. But, though it bears John Richard Green's name, it does not contain a word of his writing. It consists of the additional section contributed by Mrs. Green, dealing with the century 1815-1914. Students of nineteenth-century history will be glad to have this section available as a separate work, and so will those who possess the earlier editions of the "Short History," and wish to bring it up to date. Mrs. Green's account of recent affairs is exceedingly well written in a style which closely resembles that of the "Short History" itself. It is not an impartial work: Mrs. Green's opinions respecting both domestic and foreign politics are clearly evident. The continuity of the survey of the century is broken by her division of the subject into two sections: (1) the social revolution; (2) foreign and colonial policy. Some corrective to what is undoubtedly a defective method of treatment is provided by a useful chronological analysis of the history of the period 1830-1914, from the pen of Mr. Arthur Hassall. A number of genealogical tables from the "Short History" are also included; but as they relate almost entirely to the period prior to 1815, they might well be omitted.

### Geography.

*The Statesman's Year Book, 1917.* Edited by J. Scott Keltie and M. Epstein. 1504+xliv pp. (Macmillan.) 12s. 6d. net.—The issue of the "Statesman's Year Book" is an event of considerable importance. Those who habitually use it take up the new number to discover the new features of the year. This time the maps include one of the world showing the warring and neutral States, one of Arabia embodying the latest political information, one of South America with its railway ramifications, and one of the British Isles to demonstrate the relation between the navigable waterways and the uplands. The introductory tables give the latest available information about the world's production of gold, silver, iron, copper, sugar, grain, and petroleum, and the addenda include a concise and clear review of the political situation in Arabia. Those who are specialists examine it critically to find a brief but sound and up-to-date statement of the situation in the country they know thoroughly. This year the editors have achieved considerable success in regard to the enemy countries, e.g. there are frequent references to production in Hungary during 1915, and in Germany during 1916. Those who are new to the volume will be delighted with the facility with which its treasures may be unearthed, with the consistent grouping of the facts, and with the extensive index (124 pp.). The bibliographies appended to each section, and, again this year, a special list of books on the war, are supremely useful.

*Handwork and Geography.* Part ii. By G. Pickering and J. B. Robinson. Pp. 139. (Pitman.) 3s. net.—We welcomed part i. of this work as an effective

contribution to an aspect of geography; part ii. is similar practical and useful lines, but we feel disappointed that the authors have included as geography so much matter which is astronomical. There are twenty pages on globes, latitude, and longitude; ten pages on map projections, and these, with a few odd pages here and there, contain all the matter which is geographical. The models which are suggested are simple and eminently useful, notably, perhaps, one to show times of sunrise and sunset, and duration of twilight; and the major portion of the book will be helpful to those who wish to teach their pupils little astronomy or physiography.

### Science and Technology.

*Nature Study Lessons Seasonally Arranged.* J. B. Philip. xii+147 pp. (Cambridge University Press.) 2s. 6d. net.—The plan of this little book differs in certain respects from that of most other manuals of elementary botany. In the first place, only a relatively small number of plant types is dealt with, although the work on these is skilfully linked up, with suggestions to the teacher, with cognate exercises. The objects described have been selected with discrimination, and are nearly all of large size, of typical structure, besides being easily obtainable. Secondly—and this seems to us the chief value of the book—not only are the subjects of the chapters arranged in order of the seasons, but they also typify the phases of growth characteristic of the season. Thus, the apple fruit and the dispersion of seeds are studied in autumn, the crocus corm and cabbage in winter, germinating beans and opening horse-chestnut buds in spring; and three typical flowers in summer. The method has, of course, been adopted before in many books, but it is here worked out more consistently than usual. The opening chapter, which summarises the physiology and morphology of the flowering plant, seems somewhat out of place, and beginning would do well, we think, to defer its study until the reader has worked through some of the practical exercises. The book is well provided with test questions for pupils and with helpful notes for the teacher, and like other books of the "Cambridge Nature Study Series," is very attractively got up.

### Pedagogy.

*Shantineketan.* By W. W. Pearson. 111 pp. (Macmillan.) 4s. 6d.—This extremely beautiful but elusive little book is an account of the Bolpur School founded by the Tagore family, not far from Calcutta. The object of the school appears to be a mingling of the religious life with that of the ordinary educational activities of the world, for, though no time-table or studies is given, we understand that boys do enter for such prosaic things as a B.A. examination. We gather from this slight notice by an enthusiast that the principles of the George Junior Republic are to some extent followed, and that the teachers, of whom there are many, elect their own headmaster annually. The usual amenities of school life exist, including football, in which the young mystics excel; all lessons are in the open, but private study is done in the house—a school song, written by the poet, is sung regularly, very different in wording from our Western songs, but instinct with the same spirit. The idea at the back of the school seems to be a vivid antagonism to the wild folly of the world which values the perishable and lets the pearls go by. Orthodox Hinduism does not appear in these pages, nor, indeed, any dogma. A rather wonderful "fairy tale" by one of the scholars is printed, and two addresses by the author of "Gitanjali." Yet it is all strangely elusive.

## EDUCATIONAL BOOKS PUBLISHED DURING JUNE, 1917.

(Compiled from information provided by the publishers.)

### Modern Languages.

"Russian Lyrics." (The Russian text, accented.) With Notes and Vocabulary. Edited by J. D. Duff. vi+102 pp. (Cambridge University Press.) 2s. 6d. net.

Pushkin's "Queen of Spades." Edited by E. G. Underwood. (Oxford Russian Plain Texts.) 64 pp. (Clarendon Press.) 1s. net.

"First Russian Book." Second edition. By Neville Charles. 216 pp. (Clarendon Press.) 2s. 6d. net.

"Egyptian Colloquial Arabic." By W. H. T. Gairdner. 300 pp. (Heffer.) 12s. 6d. net.

"Foundation Course in Spanish." Part i. By L. Mangan. vi+82 pp. (Macmillan.) 2s. net.

### Classics.

"Three Tragedies of Seneca." Edited by Prof. I. M. Kingery. (Macmillan.) Increased to 4s. net. "Homer III." Second edition. (Oxford Classical Texts.) 246 pp. (Oxford University Press.) 2s. 6d., 3s. 6d.

### English: Grammar, Composition, Literature.

"Précis Writing for Beginners." By Guy N. Cook. (Blackie.) 2s.

Series of American and English Pocket Classics. With Introduction and Notes. (Macmillan.) Increased in price from 1s. net to 1s. 3d. net.—"Southey's Life of Nelson." Edited by F. H. Law. xxviii+12 pp.—"Lowell's Earlier Essays." Edited by E. G. Doctson. xx+248 pp.—"Shakespeare's 'King Lear.'" Edited by P. M. Buck. lxx+238 pp.—"Selections from American Poetry." Edited by M. S. Carhart. x+374 pp.

"English Literature." By Prof. T. E. Rankin and Prof. W. M. Aikin. x+428 pp. (Macmillan.) 5s. net.

"Ideal Catholic Readers: A Manual for Teachers." 8 pp. (Macmillan.) 10d. net.

"Talks on English Composition." By W. Jayne Weston. 80 pp. (Pitman.) 1s. net.

### History.

"The Later Middle Ages, a History of Western Europe, 1254-1494." By R. B. Mowat. 340 pp. (Clarendon Press.) 4s. 6d.

"The Living Past: a Sketch of Western Progress." By F. S. Marvin. Third edition. 296 pp. (Clarendon Press.) 3s. 6d.

"A History of Europe." By Prof. A. J. Grant. Part iii., "Modern Europe, including Great Britain." With eight coloured maps, and two uncoloured maps in the text. New edition. (Longmans.) 4s. 6d. net.

"Green's Short History of the English People." Parts i.-iv. With analysis. Reduced to 2s. 6d. each. Part v. "Epilogue." With analysis. 2s. 6d. (Macmillan.)

"The British Empire." By Sir Charles P. Lucas. (Macmillan.) Increased to 2s. 6d. net.

### Geography.

"How Man Makes Markets: Talks on Commercial Geography." By W. B. Werthner. x+200 pp. (Macmillan.) 1s. 8d. net.

"Syllabus of War Geography and History." By A. A. Cock. 32 pp. (Philip.) 6d. net.  
"Mexico of the Mexicans." By Lewis Spence. 250 pp. (Pitman.) 6s. net.

### Mathematics.

"A Book of Exercises in the Commercial Rules." (Blackie.) 6d.

"A Book of Exercises in Mensuration, with Brief Rules." (Blackie.) 6d.

"Infinitesimal Calculus." By Prof. F. S. Carey. In two sections. (Longmans.) Section I., 6s. net; Section II., in the press.

"History of Elementary Mathematics." By F. Cajori. (Macmillan.) Increased to 7s. 6d. net.

### Science and Technology.

"Fossil Plants: A Text-book for Students of Botany and Geology." By A. C. Seward. Vol. iii., "Pteridospermeæ, Cycadofilices, Cordaitales, Cycadophyta." (Cambridge Biological Series.) xviii+656 pp. (Cambridge University Press.) 18s. net.

"The Biology of Dragonflies (Odonata or Para-neuroptera)." By R. J. Tillyard. (Cambridge Zoological Series.) xii+396 pp. (Cambridge University Press.) 15s. net.

"Economic Problems of Peace after War. The W. Stanley Jevons Lectures at University College, London, in 1917." By W. R. Scott. xii+122 pp. (Cambridge University Press.) 4s. 6d. net.

"Elementary Social Science." By Prof. F. M. Leavitt and Edith Brown. viii+142 pp. (Macmillan.) 3s. 6d. net.

"Soap, its Composition, Manufacture, and Properties." By W. H. Simmons. 130 pp. (Pitman.) 2s. net.

### Pedagogy.

"Physical Education in Relation to School Life." By Reginald E. Roper. 116 pp. (Allen and Unwin.) 2s. 6d. net.

"How to Teach." By George D. Strayer and N. Norsworthy. viii+208 pp. (Macmillan.) 6s. net.

"The Vitalized School." By Francis B. Pearson. viii+336 pp. (Macmillan.) 6s. net.

"The Method and Practice of Exposition." By Prof. T. E. Rankin. viii+278 pp. (Macmillan.) 6s. net.

"Manual Training—Play Problems for Boys and Girls." By W. S. Marten. xxiv+148 pp. (Macmillan.) 5s. 6d. net.

### Miscellaneous.

"St. Luke." By the Rev. Dr. C. Knapp. (Murby's Larger Scripture Manuals.) 357+viii pp. (Murby.) 3s. net.

"Regiments at a Glance." Contoured strategical war map. By the Rev. E. E. Dorling. 130 pp. (Philip.) 2s. net; paper, 2s. 6d. net; cloth, 6s. net.

"Miscellaneous Correspondence in Pitman's Short-hand." Series III. 100 pp. (Pitman.) 1s.

"Phonographic Reader." No. II. 50 pp. (Pitman.) 6d.

"The Child's Song and Game Book: a Collection of Original Songs and Games for Children." By H. Keatley Moore. Five parts. 24 pp. each. (Year Book Press.) 1s. each. Also Parts i.-iv. in cloth gilt volume, 3s. 6d. net.

"What Bears Etona on her Shield?" Unison song for schools. By Dr. A. M. Goodhart. 4 pp. (Year Book Press.) 6d.

## CORRESPONDENCE.

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

## Science and Scholasticism.

We may well despair of any improvement in the outlook of the literary teacher, if an article such as Mr. Appleton contributes to the July issue of THE SCHOOL WORLD be representative of the general view. Few on the literary side appear to appreciate the lessons of the times or understand that, ere long, the public will demand, indeed enforce, an entire change of the scholastic attitude, above all that writers on educational topics shall cease from romancing when so serious a subject as that of boys' training is under discussion. The teacher of literary bent, apparently, is so bookish and unpractical in his outlook that he cannot put himself back into the boy's place and picture his desires and needs; at thirty-two he can but prate in ways which have little or no meaning to the lad of, or under, sixteen, however much they may appeal to himself.

Not only will some understanding of boys' needs and abilities soon be demanded, but men will not be tolerated who show little or no appreciation of what is possible and desirable in the case of the average youth, if, in any way, he is to be prepared to face the world.

The perpetual repetition of the charge—I hear it constantly at education committees—that parents send their children to school merely in order that they may learn "to get on in life," giving to this cant phrase the narrowest conceivable connotation, is one of the rankest heresies possible, and a gross calumny on the manner in which parental solicitude and responsibilities are generally exercised.

The idea that the parent is merely a necessary evil—not a person to be considered and consulted—is one of which schoolmasters cannot too soon disabuse themselves. Too many of us know what we want and that we are not getting it; we shall try all sorts of experiments in the near future, until we get it; a parents' "trade-union" for the purpose is one of the first organisations to be established after the war—and it will mainly consist of intelligent mothers, prepared to scratch, if necessary.

Mr. Appleton is one of those schoolmasters who are taking advantage of the public feeling against Germany to spread abroad the false belief that the Germans are what they are because of their education—because they are "materialistic." Therefore the education given in our schools, these argue, must be "idealistic"; the ideals to be held up, they assert, are those of the remote past, which are to be found in classical writers. In other words, they are still advocating the purchase of the only goods they wot of, and still prescribing the grand, old fortifying classical curriculum of the past as the one soul-saving discipline at our disposal. But it is precisely by this curriculum that we have been brought into our present state of ignorance and led to ignore progress. The statement Mr. Appleton makes that classics and English are the only two subjects which can provide the idealistic element in a boy's education is but proof of his entire ignorance of anything but these and of his poor knowledge of English—had he read with any understanding he would have known better.

The literary teacher, who, at best, has only the work of poor fallible humanity to put before us, is

calmly scoffing at science and asserting, what he has no right to assert, viz. that it is asked for from schools to serve entirely selfish ends. Such petty play of false argument would be altogether contemptible were not the excuse available: "They know not what they do." We can only pity the ignorance of the pure-bred literary man and deplore the loss suffered in confining his study to what is written.

Unfortunately the classicist can only picture science as serving material ends. As if science to-day were not in large measure idealism, and idealism of the highest and purest type! The true man of science is in no sense a materialist, but an ultra-idealistic accuracy and honesty, truthfulness and logic, come first among his ideals. His mind is full of wonder-visions: Nature to him means something, and is the object of a deeply religious reverence, the outcome of a sense of inexpressible wonder.

To give an example, in these days we are talking much of the wasteful way in which coal is used, and an outcry is being raised against squandering of resources. The boy at school is told something about coalfields perhaps, and that coal consists of plant remains, yet to all but a few it is merely a black dirty substance, fit only to be burnt—respected, or to the extent that it is a source of comfort at times. Some of us, however, who have learnt to know cannot gaze upon it without a crowd of visions coming into mind, instantaneously, which would take hours to describe—and we are called materialists! It is this attitude, not only towards coal, but towards things in general, that we desire to develop, by the teaching of science, in the minds of all who are intelligent.

In days not very long ago, the fight was for freedom to elicit and display truth; the fight between science and dogmatic ecclesiasticism still occupied the field and excited public interest in my early days. That battle is won, but no new war-cry is to the fore. The public like a fight; we must raise a war-cry, we are again to figure and interest them.

The cry we must raise is against the calculated spread of ignorance by the schools—against the teaching of things long since disproved. If we are not free to speak the truth, we should no longer enforce doctrines daily which it is well known cannot be justified by evidence; we should not force false beliefs on our youth, but teach them to inquire and ask for evidence. Science can go hand in hand with the highest ethical teaching, but dogma it will not have, it is ever questioning its own findings and asking for more proof.

These are the things we must seek to demonstrate to the public. Science cannot play the part it is destined to play unless its votaries once more come forward as propagandists. We have too long confined our activities to our laboratories, and have little right to complain of public ignorance. The schools have not permitted any effective teaching—those who are now posing as idealists have always stood in the way. We have arraigned them at the bar of public opinion and shown that they are put into their proper place.

Economy in the use, not only of fuel, but of all the good things of the world, will not be learnt until our public intelligence is put upon a far higher plane. Our only chance of recovery from the hopeless wastage incurred in the present war is to raise the intelligence of the nation. We must learn to live better and more productive lives.

The organisation to this end of an effective system of education will involve far more than the reconstruction of the schools. Ordinary school life cannot—must cease, in future—at seventeen at latest; loss of individuality, failure to develop independence,

infallible result of any further extension of the period. Subsequent systematic training should give, under free conditions, at places of higher education other than those dominated by the schoolmaster. But such systematic training will usually be only technical ends; our mistake, in recent years, has been that we have developed technical education, but not general education, and we must now pay more attention to this last. The difficulty is to raise and train a competent body of teachers.

HENRY E. ARMSTRONG.

In stating his case for classical studies in secondary schools, in the July issue of THE SCHOOL WORLD, R. B. Appleton must have conceived "ideal" for the "idealistic" education of which he describes the elements. He assumes that a boy who is at school at sixteen has read with appreciation the works of several Greek and Latin authors, in this reading has obtained "something which is communicable by any translation." This may be true of boys at the Perse Grammar School, under the artistic guidance of Dr. Rouse and Mr. Appleton, to suggest that boys as a rule attain a stage at which they are impressed by the thought and beauty of classical literature is to live in a world far removed from reality. Even if this result could be normally reached by the age of sixteen, it may be doubted whether a slight breath of the "idealistic" spirit is sufficient justification for "four years at Latin and two Greek."

The fact is that very few boys reach the standard of appreciation upon which Mr. Appleton depends to establish his thesis, and that the vast majority would better be employed in reading good translations than destined to travel along a dreary road towards goals they never hope to reach. This was the view expressed by several speakers at the special meeting of the Hellenic Society, held last November, to discuss "The Future of Hellenic Studies." Prof. Percy Gardner said:—"Now things Hellenic may be, to a considerable extent, studied with some slight, but not any advanced, knowledge of the Greek language, and I do think that in future we shall have to depend for the general diffusion of Hellenic culture upon translations rather than upon the originals. Boys who come from the universities have not enough knowledge of the Greek language to take pleasure and enjoyment in reading it; for that reason, I think, to obtain good translations will be most beneficial. Comparatively few read the Bible in the original, but that does not prevent it from being appreciated."

With this pronouncement from the professor of classical archaeology at Oxford before us, Mr. Appleton will have difficulty in maintaining his view that a normal boy of sixteen years appreciates the writings of Greek and Latin authors, or would not be better employed in reading translations and studying other subjects. When Mr. Appleton refers to science as "merely utilitarian," and commends the "idealism" of classical studies to counteract the "forces of materialism" represented by science, he forgets that Germany may be cited as an example of the results of his "idealistic" education. The ruling classes in the German Empire are educated in the Gymnasien, where nine years are devoted to Latin and six to Greek; and it is they who are responsible for the barbarous conduct of the present war. Science is concerned with the discovery of new relationships and new forces, but in this extension of knowledge there should be a corresponding development of the sense of moral responsibility in its use. This is the side of teaching which has been neglected, and for which provision should be made. To suggest that the study of science

means disregard of high ideals and stimulating thought is to be blind to the wonderful world in which we live, and to misrepresent the aims of those who seek to create and foster interest in it. Mr. Appleton should consider the following extract from a memorandum issued by the Committee on the Neglect of Science before associating science entirely with materialism and, therefore, incompatible with what he understands as humanism:—

"Among the aims of the teaching of science as thus defined are:—(1) To train the powers of accurate observation of natural facts and phenomena and of clear description of what is observed. (2) To impart a knowledge of the method of experimental inquiry which distinguishes modern science from the philosophy of earlier times, and by which advance is secured. (3) To provide a broad basis of fact as to man's environment and his relation to it. (4) To secure an acquaintance with scientific words and ideas now common in progressive life and thought.

"Experience shows that when scientific knowledge has been secured by practical work it becomes part of the permanent mental equipment of the pupil. Scientific method can be used in the study of literary, historical, and other subjects; but applied in this way it can never be accepted as providing the same means of training as direct observation and experimental work. By this kind of work the pupil learns to acquire first-hand evidence, and to distinguish between it and information obtained verbally or by reading; for this reason it alone fulfils an essential function in education. But while prime importance must be attached to training in personal observation and experiment, it is essential that there should also be instruction in the broad principles and results of investigation, in order to produce appreciation of the prime importance of natural knowledge to human life and thought. Modern scientific progress is just as much an achievement of thought as any other movement; and no science course is complete which does not present it as a humanistic study in the fullest sense."

R. A. GREGORY.

To Prof. Armstrong's implication that my article in the last issue of THE SCHOOL WORLD, on the "Position of the Classics in Educational Reconstruction after the War," shows no "understanding of boys' needs and abilities," I should like to reply that this glib coupling of "needs and abilities," of the *ἀνάγκαιον* and the *καλόν*, seems to be just the point at issue between us. I make a distinction between the two, and think it more important that schoolmasters should be able (to use a phrase from my own article) to develop in a boy "the finest possibilities of human nature" than that they should advocate (to use a phrase of Prof. Armstrong's) "the purchase of the only goods they wot of," or of any other goods for that matter. If Prof. Armstrong will read my article with a little care, he will find that I did not advocate a classical education as "the one soul-saving discipline at our disposal." In fact, Prof. Armstrong himself mentions that I referred to both classical and English literature as "idealistic" instruments; but he seems to imply—so far as I can understand his English—that it is only my ignorance of English literature which makes me include it! Prof. Armstrong then goes on to pour his pity upon me for imagining that "science" can serve only materialistic ends, and indulges in a very poetical and rapt contemplation of the wonders of coal. May I ask him to contemplate for a moment my own article? I don't think that he will have to "deplore the loss he suffers in confining his study to what is written"; for he will find the words, "science and mathematics, however 'ideal'" they may be for the boy who is going to the univer-

sity," in a paragraph which expressly differentiates between the advanced and the elementary study of these subjects, and refuses the ascription of "idealism" only to the elementary study of them. But Prof. Armstrong need not be alarmed; my article is not representative of the general view either towards coal or towards things in general; it is representative of the views of a very small class of schoolmasters who never know when a cause is lost, or, rather, never care, for they realise that a secondary school should be, in its own little way, what Matthew Arnold termed Oxford—a "home of lost causes."

Prof. Gregory's letter is on a different plane, and I have no quarrel with his views; but I must remind him of two things: (1) the footnote in which I said that I was speaking only of boys trained on the direct method, and (2) that I nowhere referred to science as "purely utilitarian" (to do so would be to put myself on the same plane as Prof. Armstrong), but to its elementary study only. As to the Germans, I confess to a lapse into the "popular" in my opening remarks about the forces of materialism and the lessons of this war, etc. I conjecture that the truth is that the German people have had little say in this war; at any rate I cannot believe that scholars such as Wilamowitz-Moellendorff, any more than the great men of science whose names, though unknown to me, will be known to Prof. Gregory, can justly be summed up by the Hunnish characteristics of the popular imagination. As to (2), I hope that Prof. Gregory will now free me from the charge of suggesting that "the study of science means disregard of high ideals and stimulating thought," which was equally removed both from my intentions and from my statements, and as to (1), I heartily agree that the normal boy of sixteen years does not appreciate the writings of Greek and Latin authors. That is why I teach on the direct method. "Translations" are better than the old method, but the direct method is best of all. R. B. APPLETON.

#### Advanced Courses in Secondary Schools.

ALLOW me to offer my congratulations to "M. E. W." for a very clear exposition, in your last issue, of the difficulties attending the new Regulations for Advanced Courses in Girls' Schools. My own duties for the past ten years have lain in a growing municipal secondary school, mixed throughout, and now likely to be officially thought capable of "handling" an advanced course in "science and mathematics" only.

The difficulties at the top of the school (a) in retaining any pupils at all, except members of the "science and mathematics" course; (b) in offering an alternative specialisation course, where any such must obviously be branded as inferior; (c) in introducing to Form VIA pupils from less happier lands, who may be attracted by our recognised "science and mathematics"; (d) in losing our arts pupils, not to the university or to the general life of society, which is natural and inevitable, but to another school, just when they are reaching prefect stage, and are much more to us than ever before; (e) in retaining some measure of respect for the other side, which in our case would be "modern studies" (as we have no Greek), and some measure of living enthusiasm in the "modern studies" staff—all these difficulties will soon become acute, and have already caused much anticipatory argument. I agree with "M. E. W." that two courses or none is the only fair way out of it—unless, indeed, a school is strong enough to aim at all three.

Discrimination between one side and another is bound to be a delicate matter. In my own case Board of Education and county council have already half decided that a science and mathematics course

may be allowed, or at all events "applied for," that the arguments for a modern studies course "not so convincing"—although the arguments in a scholarship list as recent as May last, where four successful candidates to the universities, "modern studies" candidates did appreciably better than two "science and mathematics." The sci. moreover, has sent faculty of commerce students two of the northern universities latterly, in each by scholarship entrance, and in the session previous to the war had sent to one university the only students taking the full university course for faculty of commerce. This year we had not only the winner of a commerce scholarship at the other local university (previously gained, in 1915, from this school), the runner-up also, his place as *proxime accessit* being duly mentioned in the university awards. It looks though "modern studies" were thriving as well as "science and mathematics." So nicely balanced, indeed, are the two sides that their annual fortunes matter of no slight local interest and animation, one is to be taken and the other left.

A further point arises, in the nature of a digression. If the schools are to be, very wisely, encouraged to keep senior pupils for two post-matriculation years, an "intermediate" year at the university will largely wasted. The universities might perhaps arrange their intermediate examinations to be taken, if by "externals," direct from school—or, in the alternative, might introduce two-year-post-matriculation pupils, after due evidence, directly to the final school. But it will be more than a thousand pities if new advanced courses, coming so pat upon the scene, and likely to supply such a longed-for crown, set all by the ears, and—changing the metaphor—allowed to upset balances and stigmatise those fortunates of the upper pan.

Finally, the idea of dispersing most of the grant among teachers actually handling the courses—say, some three or four—without remembering the others who form the staff, and have had their personal shares in building up the school to its VIA level, is inherently bad, and will cause an endless jealousy and state of torment. A school is a school, dealing with such organic material, and with such meticulous judgment of time-table and dovetail, that it is impossible to impute all the good work to three or four senior teachers who "dress off" at the top—or, in case, we shall all want to be top-dressers, and, fortunately, all science specialists and mathematicians. The single advanced course, in short, will only suffice a school specifically designed throughout, not for the general education of average youth, but for the one-sided exploitation of local atmosphere or circumstances. "Two Courses Or None." C. RICHARD LEWIS. Widnes.

## The School World.

A Monthly Magazine of Educational Work and Progress.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 225.

SEPTEMBER, 1917.

SIXPENCE.

## THE PARADOX OF STYLE:

### THE TEACHER'S PROBLEM.

By J. H. FOWLER, M.A.

Clifton College.

You gods! I prize,  
And the most noble mother in the world  
Leave unsaluted.

NE after another, three or four of them, they repeated it, boys in a modern fifth saying their repetition out of "Coriolanus." Was there a misprint in the book? No, ere it was printed correctly—

And the most noble mother of the world—  
at the unobservant eye of boyhood had changed the unfamiliar preposition into a familiar and by an alteration of letters turned a line of pure gold into a commonplace expression of every day. "O! the little more and how much it is, and the little less and what worlds away!" I murmured to myself, and should probably have drifted, if the duty of the moment had not prevented me, into a meditation on the supreme and unanalysable virtue of style. I pointed out the difference to the form, and I hope that one or two of them understood, or will understand in due time. To the rest the correction may have seemed pedantry, or Shakespeare's variation from the ordinary phrase the tiresome affectation of the literary man. Did not Mr. Charles Whibley once say, "There is nothing the public hates so much as style"? One is sometimes tempted to think he was right. And incidentally I received in connection with that same passage confirmation of his view. For I discovered at one boy was using an edition which had "expurgated" (*incredibile dictu*, but it is true!) the very lines that had led me to choose the piece for repetition:—

O! a kiss  
Long as my exile, sweet as my revenge!  
Now, by the jealous queen of heaven, that kiss  
I carried from thee, dear, and my true lip  
Hath virgin'd it e'er since.

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Conceive, if you can, the mental and moral obliquity of that editor who found in the exquisite purity of Coriolanus's address to his wife—the very passage surely that led Mr. A. C. Bradley to end his delightful lecture on "Coriolanus" with the remark that, however the hero might loathe and execrate the people, "he was no more capable of injury or insult to a daughter of the people than Othello, or Chaucer's Knight, or Don Quixote himself"—something dangerous or unmeet for the ears and hearts of youths and maidens.

One of the best things in Sir Arthur Quiller-Couch's lectures on the Art of Writing<sup>1</sup> is the emphasis he lays on the paradox of style—that, whereas style is the expression of a writer's individuality—and that is why its virtue is unanalysable and inimitable—there is nevertheless such a thing as a standard, and sound criticism is agreed to a wonderful extent as to the writers who possess the virtue of style in a supreme degree. The teacher of composition, if he is to be of any great use to his pupils, must bear in mind both propositions simultaneously.

In old-fashioned manuals the tendency was to remember the second proposition to the exclusion of the first. It was the mistake of "classicism" in art repeated on the humbler level of the school exercise. Rules of composition, deduced originally from the practice of great authors, but often repeated at second or third hand by those whose knowledge of the great masters was neither wide nor deep, bound the beginner. He was oppressed with a sense of the mystery of the art which he was asked to acquire. Worse still, rigid and arbitrary and complex rules of grammar were sometimes imposed upon him. Language was made to seem a difficult, but also a mechanical thing.

Then came a discovery, which, perhaps, we owe to the never-to-be-forgotten "Essays of Elia" and to the charming autobiographical

<sup>1</sup> "On the Art of Writing." (Cambridge University Press, 1916.)

papers through which R. L. Stevenson made friends of all his readers more than through anything else—the discovery that style was the expression of a writer's personality. At long last the poet's counsel to himself, "Look then in thine heart and write," was seen to be applicable even to the schoolboy. Or perhaps I should rather say that it was a variation of this counsel. For the new preceptors were not commonly of an introspective turn. Their strength lay in their grasp of the material objective world. They had learnt from the methods of Kipling and G. W. Steevens. "Open thine eyes," they said to the schoolboy, "look about, and set down what thou seest." The result of the advice, admirably given in Mr. P. J. Hartog's and the late Mr. Townsend Warner's books<sup>2</sup>—stimulating works which no teacher of young boys and girls should be without—has been a great improvement in the teaching of composition in the more elementary stages. There may still be schools which the movement has not reached. A writer in the *Educational Supplement of the Times*<sup>3</sup> tells us that he "did" two essays in the third form, one of which was on 'Physical and Moral Courage'; one essay in the fourth, on 'Anything You Like'; none in the fifth, to the best of his memory; but a great many in the sixth, across one of which was written as sole comment the word 'balderdash.' But he admits that this experience was twenty-five years ago; let us hope that it would be exceptional now. On such evidence as comes within my reach I am disposed to believe that thousands of children have, through a better choice of subjects and the changed point of view of their teachers, discovered in themselves a faculty of observation and a power of expressing "choses vues" which must be a real delight to themselves and will be a source of delight to their friends also if they retain it in the letter-writing of subsequent years. And amid the outpouring from the Press of much deplorably feeble writing one hails with satisfaction a notable increase in the number of writers who have the power of reproducing simply, lucidly, and strikingly the scenes they have witnessed. One excellent example of this kind of work which I have lately come across I should like to take this opportunity of mentioning—Capt. C. E. W. Bean's "Letters from France." That letters so sound and sincere and unpretentious should have been written for a colonial newspaper, and that the Commonwealth of Australia should have appointed a

man with these virtues of style its official reporter, seems to me a happy augury for the future of English. For our language is destined to become more and more what the English-speaking world outside the mother-country combines to make of it.

But the uses of description and narration are not the only uses of speech; and it is when we come to more ambitious purposes that we feel the inadequacy of some of the newer guides and methods. The construction of a reasoned argument in history or science or in moral or political philosophy, the lucid setting forth of a case, the preparation of a speech or sermon—no doubt these things are for the mature practitioner, not for the schoolboy. Yet if there is no training for them at school, the probability is that but a gifted few will stumble long and badly before they get upon the right road to the goal. How is the teacher to help? And where is he himself to find assistance for his task?

Remembering still that our object is simply to help the essayist to express his own personality in his work, we shall be on our guard against attempting to do too much, against fixing too arbitrary ways of approach to the subject or methods of handling it. My experience shows that the learner does need a good deal of guidance in most cases—the mere practice does not necessarily lead to perfection, but often leads, on the contrary, to monotony and dullness and the repetition of stereotyped phrases. First and above all, there must be reading of the English classics with some learning by heart of the best models, that the pupil may insensibly acquire a larger vocabulary, an ear for rhythm, a distaste (by contrast) of all that is slishy and vulgar in speech. Then there must be some study of the history of the language, at least unless the pupil is fortunate enough to be receiving at the same time a sound training in Greek, Latin, and French. Perhaps only an experienced schoolmaster knows how vague and blurred are the meanings of words in the mind of the average boy. A good style is simply impossible for anybody whose ignorance of the precise differences in the history, and therefore in the meaning and connotation, of words is such that he has no instinct for avoiding incongruous metaphors or associations. Thirdly, in the actual construction of the essay there is much to be learnt from the study of such a book as Mr. Classen's<sup>4</sup>—hints on good and bad types of sentence, openings and conclusions, transitions, the unity of the paragraph,

<sup>2</sup> "The Writing of English." By P. J. Hartog. (Oxford, 1907.) "On the Writing of English." By G. T. Warner. (Blackie, 1915.)

<sup>3</sup> June 28th, 1917.

<sup>4</sup> "Lectures on Style and Composition." By E. Classen. (Macmillan, 1917.)

and so forth. Again, the abler sort of boy or girl will derive both amusement and profit from reading the examples of errors of speech selected by the industrious and ingenious authors of "The King's English." If it is an outrage to propose to turn *Punch* into school book, one is tempted to suggest that gaiety of the classroom might be increased, and the utilities of the English lesson not diminished, by a selection from the newspaper cuttings which have delighted so many readers during the last few years. And how far is the teacher to attempt to suit his or her own preferences of style? may perhaps be comforting, and it is certainly salutary, to remember that in any cases youth is fully able to protect itself against the bias of its preceptors. Because we preach the virtues of a certain particular style, it does not follow that we have persuaded our pupils—no, not when the impress of our teaching is clearly visible in their productions. We may only be provoking a reaction which will follow in due course. Secondly, we shall do well to recall the words of one who was a shrewd observer as well as a great writer, Mark Pattison<sup>5</sup>:—The last thing which a youthful taste learns is the might of simplicity. The more artificial the model, the more captivating to the eye. We shall continually keep before our eyes and our pupils' the sovereign virtues of simplicity and sincerity; but, remembering this natural inclination of youth towards the florid style, we shall seek to make the best of it, to guide it to good specimens of the kind, rather than simply to discourage by unappreciative comment. We can point out where Macaulay or De Quincey or Ruskin falls short of the ideal; we shall do better to notice more often where they have achieved real triumphs. When I was preparing a few years ago a little selection of "purple patches" from the great orators, my colleague, Mr. W. W. Asquith, sent me a long passage in monosyllables which he had just found in the Life of Sir James Paget—as gentle intimation, I imagine, that this was the more excellent way. Since then Bishop Browne in his "Reminiscences" has given us one or two experiments in the same direction. In the now discarded "philologies" of our childhood we used to be told that the "monosyllabic" stage comes first, then the "agglutinative," then the "synthetic" speech of civilised communities, destined in its turn to break up into "analytic" forms. Do the preferences of the individual follow that imagined experience of the race? In a few

more years, if I live and teach long enough, I may find myself practising and enjoining the practice of monosyllables. At present I am not prepared to adopt that platform, in spite of my admiration for such monosyllabic victories as:—

So long as men can breathe, or eyes can see,  
So long lives this, and this gives life to thee.

Yet I own that I was dismayed at the preference for ornate writing lately shown by that modern-side form which I have already quoted. An examiner had put side by side the two famous examples of simple and artificial speech which Macaulay long ago brought together in proof that even to Dr. Johnson it did not come natural to think in "Johnsonese":

When we were taken upstairs, a dirty fellow bounced out of the bed where one of us was to lie.—"Letter to Mrs. Thrale."

Out of one of the beds on which we were to repose started up at our entrance a man black as a Cyclops from the forge.—"Journey to the Western Islands."

Which sentence was the better, asked the examiner, and why? Not a few votes were cast in favour of the longer specimen as the more literary and dignified. Possibly such votes were merely given on a mistaken calculation that an examiner's preference was likely to be in favour of rhodomontade; but the choice was not less disquieting in its implied ignorance of the aim of literary art. I agree wholeheartedly with Mr. Hastings Crossley in the doctrine of his very interesting pamphlet on "Style and Composition,"<sup>6</sup> that strength and sincerity are the chief virtues of style, and that he who aims first at beauty is likely to miss the more important things—and even to miss beauty itself.

But where is the teacher of composition himself to find help for his work? To know what advice to give, and to know when to refrain from advising, he needs his own taste and judgment to be trained and fortified by study of the great writers. The English dislike of scientific study is apt to result in the teacher being content with a very inadequate equipment for his task. He is inclined, if he has a genuine love of some things in literature, to credit himself with an instinctive taste for the best and to despise anything more than this as superfluous, or even as harmful pedantry. But even if a man's taste were perfect from the beginning (and it would be easy to show by examples from the great geniuses of our literature, beginning with Shakespeare and Milton, that this is

<sup>5</sup> "Essays," vol. i., p. 135.

<sup>6</sup> "Style and Composition." By H. Crossley. (National Home Reading Union, 1916.)

never the case), it would still be only his preferences of which he could be sure. The catholicity which comes from learning to put ourselves at points of view that do not readily appeal to us is the last fruit of training. Yet the teacher needs it. Without it, he is liable to do harm by turning the talent of a pupil away from what may have been its truer direction, or by sowing the seed of a life-long prejudice against some author whom he himself has never comprehended and whom his pupil has never read. That is why I rejoice that some of the recent writers on composition have recalled attention so emphatically to the study of the great classics. *Vos exemplaria . . . nocturna versale manu, versate diurna*—"Study the great models by day and by night"—is the burden of Sir Arthur Quiller-Couch's lectures, and the counsel is the more noteworthy because it comes from a professor in some ways very modern and unacademic. It is the special merit of Mr. Crossley's pamphlet that he has condensed into thirty pages so many stimulating criticisms and sound judgments on literature. Mr. Rannie<sup>7</sup> has brought wide reading, long meditation, and an analytic mind to bear upon a similar task. Mr. Classen has applied his study of the methods of the great masters to the practical problems of composition. The teacher of the subject was never so well supplied with guidance and encouragement as he is to-day.

#### DAY CONTINUATION SCHOOLS.

BY CHARLOTTE M. WATERS, B.A.

Late Headmistress of the County School for Girls,  
Bromley.

**O**N the seventeenth day of March in the third year of war a Departmental Committee, having as chairman the Parliamentary Secretary of the Board of Education, issued a report on Juvenile Education in relation to employment after the war. If the recommendations are carried out, there will be wrought a revolution comparable only with that of 1870. The main proposals are:—

(a) That between the ages of fourteen and eighteen all boys and girls should be compelled to attend a school for at least eight hours a week.

(b) That these school hours should be taken within the working hours of 8 a.m. and 7 p.m., and not in the evening after a heavy day's labour.

(c) That the education provided in these schools should include general, practical, and

technical instruction, physical training, medical inspection, and clinical treatment.

The object of this article is to consider some detail how these recommendations are to be carried out.

At the beginning, certain fundamental considerations push to the front and must be determined before all else. The first of these is the question of times and seasons. The schools are emphatically to be *day* schools. As the committee so rightly says: "We do not want any more of the waste and overstrain involved in the teaching of tired pupils and tired teachers." It is all the more unfortunate, therefore, that later in its report the committee apparently contemplates the possibility of the hours of school being 5 p.m. to 7 p.m. Such a proposal must be vetoed from the beginning; those hours are worse than the old 7 p.m. to 9 p.m. of the evening schools. They would mean that the boys and girls would be at work from early morn until 4 p.m. and, without any time for rest, be turned on to instruction or physical exercises. The original plan did at least provide, for most, an interval of one to two hours. We shall therefore assume that the committee's hour limits are amended from 8 a.m. and 7 p.m. to 8 a.m. and 5 p.m.

The next question is merely one of expense. If the school could arrange the hours of the individual pupils as it pleased, it would be possible to have each of the four years up at different times. Thus the fourteen-year-olds would come at one time, the fifteen-year-olds another, the sixteens at a third, and so on. By this means the work could be spread over the whole week, a full-time staff (always cheaper and more efficient than part-time engaged, and much smaller premises required). It would, however, involve the release of the boys and girls by the employers in some cases in the morning. If the masters were left to the individual school, acting in consultation with the employers, and no attempt were made to regulate all the schools in an area from an education office, there would probably be no difficulty that could not be overcome. The assumption will here be made that this has been arranged.

The other two fundamentals are concerned with the health of the growing boy and girl. The period suggested by the report is four hours in length, making two periods in the week. It is argued that, since part of the four hours is occupied in manual and physical training, this should not prove too tiring. It is surprising at this date to find a public body so intelligent as the members of this committee have shown themselves to be, making such a blunder. It is recognised now by mo-

<sup>7</sup> "The Elements of Style." By D. W. Rannie. (Dent, 1915.)

educationists and all psychologists that physical work is not a rest from mental, and at the drill lesson is quite as exhausting as in arithmetic. Four hours at school together with four hours at work is too much for the adolescent, at any rate from fourteen to sixteen years of age. A better division, which will be adopted in what follows, is two periods of three hours and one of two. This leads us to a point deliberately avoided in the report, viz. the limitation of the hours of labour. Although the committee judged the question to be not within its reference, there is no doubt it is of fundamental importance. Unless these hours are strictly limited in the case of adolescents, the greater part of the time spent on continuation schools will be wasted. The report does mention that forty-eight hours, including the eight spent in school, has been put forward by several witnesses. The Minority Report on the Poor Law talked of sixty, the Workers' Educational Association of forty-five. It is probable that others, if consulted, would put it lower still. The present writer is of opinion that they could be limited to forty hours. It is time that as much care is taken by the State of the adolescents of the working class as a careful parent of more fortunate children would take for his own. If we are ever to replace the stage of the last three years, we must see to it that the mothers and fathers of the children to come are not the undersized, tired, anaemic products of the nineteenth century, but men and women whose youth has been left to them, by which they may grow to a physical and mental stature.

Having, then, settled on preliminaries, what will be our first step to give practical shape to the scheme? Probably the wisest thing would be to select the head of the school proposed and use him or her for all he or she is worth. It would save time and save money. But whether you find your head fore or after, still, either with his advice or without it, you will have to decide on your building. Obviously in early days it will be inadvisable to start on bricks and mortar and so stereotype all your inevitable mistakes for fifty years. So far as possible existing schools should be used. Never could these be elementary schools; fortunately, the hours make that practically impossible. There may, however, be attempts to do things on the cheap, and by adding a room or two to existing schools use one headmaster for both. When we come to consider the question of teachers, we shall see why this is undesirable. There is another reason.

We want something far more beautiful and human and gracious than the hideous blocks

handed on to us by a generation without art or imagination. We want a place that shall be their own, in which the pupils shall take a pride, which they shall learn to love. Can anyone be conceived who could awaken a love for a three-story brick atrocity of barn-like rooms, windows that no one can look out of, walls half drain-pipe coloured, half yellow brick wash, staircases like wells, the whole bordered by a strip of asphalt ornamented with dustbins? For this reason, too, it is to be hoped that technical institutes will only be used when nothing better is available. It would be better to have a mere wooden hut that was one's own than the most palatial erection shared with others. If these schools are to take hold of the affections of our young people they must belong to them, and unless they do so take hold we may spend our money and our labour in vain. In all places where possible the continuation school should be housed in a private house *with a garden*. Except in places like the City of London or the centre of Glasgow, such houses could generally be found, often relics of old times from which the tide of fashionable life has receded, left high and dry on the sand dunes of decreasing prosperity. In the smaller towns there would be probably several, in the suburbs of the greater towns also, while in the half-rural, half-urban area that stretches at least thirty miles round London and smaller distances round our other great cities it would be not merely the easiest, but the cheapest solution.

Such a house would contain at least two, probably three, rooms large enough for classrooms, smaller rooms for cloak-rooms, studies, libraries, and one large room for assembly and dining. For science, manual, and physical work, military huts could be secured and fitted cheaply, and the garden could be the centre of much of the school activities, whether in town or country. Indeed, a garden seems essential, increasing in size as the district is increasingly rural and land not quite so thickly paved with gold. The advantages of such a building are great. It at once creates an atmosphere of space and leisure and civilised human intercourse, it is something worth while troubling to keep beautiful and clean, somewhere in which, having got rid of the sweat and ache of toil, the body and mind may expand and learn to find joy in something as cheerful as the public-house and as stimulating as the cinema show, but not so deleterious to body and mind.

If, as the report suggests, the school should also be a club, then it is essential that it should be a place that demands by its mere appearance the decencies of civilised inter-

course. In quite rural districts where the continuation school would muster only some fifty to sixty pupils, perhaps even fewer, a private house might not be possible to obtain. In this case the military huts might be adapted, though a cottage as a nucleus would be desirable—anything not made of corrugated iron.

Having secured our building, it will be necessary to find our teachers—not an easy job, as the report recognises. What sources are there that can be tapped? There are three—the elementary-school, the technical, and the secondary-school teachers. Of these it seems natural at first to turn to those already teaching the boys and girls who will fill these new schools. But there are reasons why this plan is neither possible nor desirable. In the first place, there are not enough elementary-school teachers now to staff existing schools, and the shortage will be worse when the school age is fixed at fourteen without exemptions. Therefore, any recruits from this branch of the teaching profession will only deplete the existing schools. There is, however, another reason. The training of children and the training of the adolescent demand very different qualities in the teacher. It is rare to find a teacher equally gifted in both. Usually, the more skilled a teacher in dealing with children up to twelve years of age, the less skilled is he or she with older boys and girls, and the same is true of the good teacher of upper forms. No doubt some of the present elementary-school staff will be glad of the opportunity to pass from work to which they are temperamentally unsuited to something they can do well, but the majority of that branch of the profession have been trained for the teaching of children and would not succeed with older pupils. It is not a question of knowledge or academic standing, but of temperament and experience.

Of the technical teachers a few will be required, especially in the large towns, where skilled work may to some extent be taught in the continuation schools. This, however, will not be done usually; purely technical instruction will be given in trade and technical schools as heretofore. There remains, then, the secondary-school teacher, and it is from this branch that the teachers must be drawn, if the schools are to succeed. What is more, they will require the best type of secondary-school teacher, the type that educates, not merely instructs; that regards the pupil rather than the subject; whose best work is done, not in the classroom, but in the playing-field, the dinner-hour, and the school clubs—men and women not necessarily of high academic honours, but of the widest possible culture and

with a real love of boys and girls simply because they are boys and girls. These people exist; they must be hunted for and tempted into the new work. It is not money alone that will do this; indeed, money will come second, not first, with most of them. They must be tempted by being offered scope and freedom, the joy of the pioneer, but also the liberty of the pioneer. They can be had on these terms, and these alone. They know how to handle the adolescent; they are skilful in that mixture of leading and compulsion that makes the youth follow whither he can not be driven; they remember their own struggles to cross in safety the whirlpool of growing manhood and womanhood, and know when to throw a life-line and when to stand aside. Such skill can only be gained by practice; that practice has been had by secondary-school teachers alone, and the new venture must have their services.

In big towns there will be separate boys' and girls' schools, but in rural and semi-rural areas they will probably be mixed. In this case the present writer believes that safety lies alone in placing a woman at the head. This is not the place to discuss co-education, but it can merely be pointed out that most secondary schools in England have for the most part failed. One of the reasons is that while women can control boys, few men can control the girl of fifteen and above. Another is that the interests of the girls are sacrificed, not by intention, but by ignorance in mixed schools run by men. Some men on the staff would be advisable, but the control and organisation should be in the hands of a woman.

The number of the staff is estimated in the report as one teacher to eighty pupils. This would be a possible minimum for a school of 300, and in large towns this number would probably prove the most economical. The school should exceed it, for personal influence is going to make or mar these schools, and no head can keep in close touch with more than 300. In schools for 200 pupils staff would have to be at the rate of one to sixty at least. Every school would require on the staff one teacher for the human side, history and literature; one for science, including geography; one for physical training; and one for manual work; the last two would be part-time in small schools. In rural districts the head could probably only be one full-time teacher, but if careful grouping were made a staff of full-time teachers could be attached to five or six schools; motor bicycles would probably solve the problem.

It may be argued that it will be impossible to secure men and women in rural districts

hat will depend on what we are prepared to do for them and what status to give them. There is no insuperable difficulty in finding medical men for country districts, and if we can get to the head of a rural continuation school such salary and position as will enable us to obtain the social intercourse, the books, magazines, and other means of intellectual life usually at the command of the country doctor, there is no reason to expect a dearth of candidates for the work. The headmaster, indeed, would have one great advantage in his longer holidays, during which he could regain touch with the more varied life of the towns.

The curriculum would, of course, vary considerably in detail with the district. But the variation would be more in method than in subjects. Out of the eight hours allowed, about one and a quarter would be occupied in assembly and break—both absolutely necessary. Of the remaining six and three-quarters, some two hours for physical training and one and three-quarters for manual work would leave three hours to be divided between the humanities and science. The former would consist of history and literature in the proportion of about one to two. The history would be social and industrial rather than political and constitutional, but would include in the third and fourth years some knowledge of modern Europe and the problems of the Empire. The literature would have one aim, and one only, to cultivate a love of books; much of the ordinary school book beloved of the specialist would drop out, and the choice would be guided by the taste of the boys and girls. No time would be wasted in grammar, nor a great deal on composition. Matter rather than form would be the chief concern. The range would be wide, stretching from Homer to Masefield in time and from Ibsen to Tagore in space. It should be axiomatic that if the pupils are bored, then either the subject is unsuitable or the teaching bad.

Science would vary with the environment, being based on chemistry, physics, and mechanics in industrial areas, on botany and geography in rural districts; with pupils mostly engaged in commerce geography and natural history would predominate. But all alike would require some fundamental facts and laws of physics and chemistry, whether illustrated by the growth of heat, the cooking of a meal, the rise of an aeroplane, or the action of a steam-engine. Physiology and hygiene would be taught in every school.

Of manual works, gardening would be the most general, except in crowded areas, and

it would include the use of tools and carpentry for boys and girls alike. Drawing would also be taught to all, and should form part of the work in nearly every subject. Cooking, sewing, and washing should be included in the four years' course for both sexes. The only really special work for girls would be baby care and dressmaking.

The report rightly makes a great point of physical training and recommends Swedish drill; to this should be added games and dancing. Games should form part of the eight hours' course at least in the first two years, for it must be remembered that the elementary-school child has yet to learn to play. Organised games are still rare in elementary schools, and there is no fear for many a long year of the public-school danger that they may dominate school thought and tradition. Their moral and educational value need not be insisted on in England. To the girls of the working class they would revolutionise the outlook on life. The report recommends medical inspection at sixteen and again at eighteen, together with clinical treatment. After Sir George Newman's report such a recommendation needs no emphasis here.

There are a few other things for which provision *must* be made, not as luxuries by up-to-date and enthusiastic authorities, but as essentials compulsory on all. The first of these is the provision of spray-baths; without them you may educate in vain. Perhaps the experience of millions of men in this war may bring home to many, hitherto ignorant of it, the moral and mental deterioration accompanying an unwashed body. There is no reason whatever why the boy from the fields or the workshop should remain unwashed and unkempt any more than his more fortunate brother from the river and the football field. Only our stupid and expensive housing arrangements make cleanliness impossible to thousands. In the continuation schools we have the chance at small expense to revolutionise the habits of a nation in the direction of health and sanity. The provision of some twenty-five to thirty spray-baths in each school means a small capital expenditure and a trifling addition to the coke bill, and would add 50 per cent. to the keenness and intelligence of the pupils; it would also increase their health and vigour and so indirectly their industrial efficiency.

School dinners would also be necessary, both to save time and ensure proper feeding. On a basis of pre-war prices they could be provided at a cost of 4½d. or 5d. for a full dinner, whenever the numbers exceed 100.

Cheaper meals in very poor areas could, of course, be arranged.

Every school would require a library, at least for reference. In towns where there is a good library on the open access system the school library need only supplement it, but in the many districts which have either no library or one badly managed the school library would be essential. An expenditure of about 2s. per annum per pupil would in a few years provide a fair selection of books.

Lastly, a high standard of cleanliness of buildings would be demanded—the condition of most public elementary schools is a national disgrace—every room must be thoroughly cleaned, the floor scrubbed, or preferably polished, every week (six to twelve weeks is a common interval between two scrubbings in elementary schools and technical institutes), and the whole place kept at least at as high a level as the best homes of the pupils. This is much more important than stone facings, or even advanced arithmetic.

Having got our teachers, our buildings, and our pupils together, we shall set out to make a living organism of the community. The school buildings will be open in the evening as a club, where every kind of light and serious entertainment will be provided by the pupils. Music—a choir, and possibly an orchestra—will find its place here, art lectures, debates, literary readings, theatricals, games, both indoor and outdoor, papers and magazines; some or all of these will gradually grow up and form a centre for all young people of the district. This side of the work would be organised and controlled by the boys and girls themselves, thus forming a valuable training in communal work. The developments possible stretch out in all directions with almost dazzling hope, if only freedom for growth is given, for such an institution is a plant, not a machine, and must be treated accordingly.

The main difficulties will arise in rural areas like Norfolk, Lincoln, and Devon. Here the work must proceed slowly and indeed carefully. There is a heavier weight of prejudice to lift, greater physical difficulties, material to deal with not necessarily duller, but certainly slower than that of the towns, and bowed beneath tradition piled by the crumbling centuries. But if care is taken to begin the scheme in the best and most hopeful places, and make it a success there, leaving the isolated areas to be drawn in by degrees, all should eventually be well. Some such scheme as the following might do. Establish a school midway between two villages and make the law compulsory for all

whose work lay within two miles of the school and voluntary for those at a greater distance the employer being bound to release in either case. At first the voluntary pupils would be nil, but as the school became popular one or two would drift in, presently more, and then would come a cry for another school more easily get-at-able, and so, instead of forcing the schools on the people, the people would demand them as a right.

Of course, such a scheme depends making the schools popular; but unless made popular they will fail. To this end see diligently for the right man or woman, a having found him "get out of his way," lead him to develop as he can and on his own lines do not waste his time filling up forms saying what he is doing, let him do it—if you want to know what it is like, go and see for yourself. Let him get what help he can, voluntary or paid—do not tell him he *must* have music when he does not know "God save the King" from the "Marseillaise" and cannot find a voluntary helper. If you discover him reading political economy with an interest, class or teaching clay modelling and showing pictures of Greek statues, leave him alone and do well what he can, instead of insisting that he shall do badly what he cannot. His values are not your values, nor those of the next head ten miles off, but he can only work well to his own, he can only lead to goals he believes in. Force him elsewhere, stereotype him to a pattern, and you kill all he has given; he can lead no longer and your school withers to its roots.

One word remains to be said about cost, said last because this is one of the things we cannot afford not to have. The Departmental Committee estimates a maintenance cost of £3 a head, exclusive of buildings. A school of 300 could probably be maintained for that sum, one of 200 would cost £4, and in small rural schools of fifty it might be as high as £6 a head. Of this cost at least 75 per cent. should be borne by the central authority; only in this way can the rich cities be made to help pay for the poor rural area, and as the need is national, not local, such a distribution is not only essential but just. We have learnt one thing recently—that we are much more mutually dependent than we thought, and that the prosperity of even London City is based on and affected by that of Little Puddlecombe-in-the-Mud.

The whole idea of day schools for adolescents is big with hope and promise; it is one of the great things the possibility of which has been bought by the lives and happinesses of our best. It is for us to see that they have not paid thus in vain.

## "NEW" LANGUAGES AND THEIR PLACE IN THE SCHOOL CURRICULUM.

By E. ALLISON PEERS, M.A.  
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THE foremost sign of the revival of interest in modern language teaching, which we are now beginning to recognise as one of the educational results of the war, is undoubtedly the general enthusiasm awakened for the languages of other countries, notably of our Allies and of Spain. It would be deplorable if this should be the only outcome of the forward movement, or even if responsible teachers and students should consider it as such, but it is good that it should be emphasised by all whose hearts are truly set on reform. And this not merely because it is desirable to demonstrate that we are reforming in earnest, much less because we are anxious to provide for certain pupils what will be the essentials of future commercial success. The reason is wider than this: we shall be compelled, now that we have taken part in a world-war, to throw off our former insularity and become world-thinkers. Before the war those who wished to teach Russian in schools were scorned as mere idealists; so were those who advocated the building of a Channel Tunnel. Now, however, both schemes, if not universally acknowledged to be practicable, are at least recognised as being within the field of probability.

At the Paris Conference in the early summer of 1916 the Governments of the Allied nations were unanimous in adopting resolutions providing for a period of economic warfare after the actual war is over, and for the mutual fostering and assistance of the trade of the Allies. It is surely evident that the carrying out of these resolutions will be accompanied by a temporary decline of German in schools and a corresponding quickening of interest in the Allies' languages. Whether this substitution of other tongues for German will be temporary or permanent, it is not here relevant to discuss.<sup>1</sup> The essential point is that for a long time, as human reckoning goes—our language studies must be on a basis sensibly broadened, in order to meet the demands on us which will certainly be made. Nor must this broadening process be confined, as some suggest, to higher or to strictly com-

mercial education: the secondary schools must take their proper part, and more particularly must an advance be seen in the curricula of our public schools.

Which languages are to be introduced will depend very largely upon the acquirements of the modern language staff—for, except in unusually favoured schools, it will be impossible in these days to import specially qualified teachers—and upon the ages and the mental calibre of the pupils. For the average boys' school it may be said without hesitation that Spanish is by far the most suitable. It is of very great commercial importance, being the language universally spoken in a huge field which is waiting for English toil; even before the war many of our leading headmasters were continually urged by business men to introduce it. It has also an attractive literature, and combines vigour with grace in a way which boys have invariably been found to appreciate. Lastly, although to gain complete command over any language is difficult, it is easy to obtain a serviceable knowledge of Spanish, and this is the principal thing that our boys will require.

Whatever may be said of other languages, Spanish can certainly be taught quite well as an extra subject out of school hours if it is not found possible to give it a place on the timetable. My own experiences in this respect have been singularly happy and not, I hope, exceptional. From the outset it was easy to divide the pupils into two well-marked classes: (1) Able boys from the fifth and sixth forms, who make rapid progress, but join the class only for their last year or year and a half at school. (2) Boys of moderate ability, mainly from the third and fourth forms, who work steadily but progress slowly, yet who, on the other hand, frequently remain for two or three years longer at school after joining. Certain practical difficulties arise here which in this general paper cannot be discussed, but I ought to add that these two classes are probably best kept distinct, though the second class may be used as a stepping-stone for novices who will eventually reach the first. I must say, too, that the boys of the second type are to me, personally, the more attractive, and the fact that so many of them have come forward and continue to do so seems to speak very emphatically for the motives which prompt them, for the genuineness of the awakened interest in Spanish, and thus for its future in schools.

Italian, more graceful and less masculine than Spanish, with a superb literature, but of less commercial utility, is clearly more suited to girls' schools than to boys'. So far as the public schools are concerned, it is likely to

<sup>1</sup>If my own view, however, may be stated, it is that while the languages of our Allies will certainly play a permanently larger part in educational curricula than they have done in the past (their respective educational values, at present undetermined, being the ultimate criteria of size of that part), the study of German cannot wholly die out. For German furnishes an excellent mental training for pupils who already learn French and Latin, and the strength and beauty of its classical literature are beyond all question. When the utilitarian motive once more reinforces the two more powerful motives, I believe that German will regain something like its former place in our education.

be confined to individual enthusiasts, or, as is sometimes the case already, to a little group of future classical scholars under the able direction of a master who loves modern Italy and medieval Italian literature as well as ancient Rome. In girls' schools Italian might well take the place of German, and few would regret the change. For many girls take a violent dislike to the obscurities of modern German and the harshness of its sounds; and seeing that its literature is far less spiritual than that of Italy, which is in all other respects at least equally great, there seems no reason for preferring it to Italian any longer.

The great crux of the question of the introduction of fresh languages into secondary schools is undoubtedly the position of Russian. At the universities, in large commercial centres, and in a few schools in London and other large towns and cities, where well-qualified part-time teachers can be obtained, it is being widely and enthusiastically taken up. But in the ordinary secondary school and the smaller public school there is much hesitation and discussion as to whether the introduction of Russian is possible, and, granted that it is possible, whether it is not more expedient to take up Spanish. It may be well, in order to consider the issues as clearly as possible, to take the arguments on both sides and state them in summary form:

**PRO:**—(1) *Educational value.* — Russian affords a far more valuable mental training than either Spanish or Italian, is superior in this respect to German, and is probably not surpassed by Greek.

(2) *Utility.*—Russia is naturally anxious to give England the preference in commerce over Germany. But Germany is nearer to Russia, and Germans have learnt Russian in the past and are still learning it. We must therefore be able to turn out for our great Russian-trading firms agents who have a command of the language at least as effective as that of the German agent. Otherwise there is the danger that Germany in the future may build up a great Russian trade by reason of our remissness.

(3) Russian possesses a literature well worthy of study, and the fact that it is in many respects unlike the literatures commonly studied does not render it of less, but rather of greater, value.

It follows from these considerations that Russian is worthy of a place in the public school, alternative to that of Greek; a boy who left school knowing Latin, French, and Russian would be just as well educated as the average boy who leaves the Classical Sixth to-day.

**CONTRA:**—The educational and utilitarian merits of the Russian language are not generally denied: the difficulties are mainly practical:

(1) Russian is a difficult language—this is frequently contradicted by Russian teachers but it is certainly my own experience and that of all the students, whether men or boys with whom I have discussed the question. It is not, of course, insurmountably difficult; the alphabet is soon mastered, and the grammar is fairly simple, but pronunciation and vocabulary are both strange, and there are few evident points of contact with other languages. The language could not be undertaken by the ordinary pupil as extra work, nor could it be studied at all in a school by pupils who have not pronounced linguistic faculties. And if it were introduced, at least as much time would be required for it as is at present taken by Greek.

(2) The supply of teachers in ordinary towns is very small, though steps are being taken to improve it, and few teachers would be found willing to study the language with the view of teaching it as compared with those who would take up Spanish or Italian.

(3) Although Russian might be made an alternative to Greek in schools where Greek is studied, it would be unwise to substitute for Latin in the very large number of secondary schools where only Latin and French are taught. Still less could it be taught in those schools where extra mathematics and science occupy the place of Latin, and where no modern language is taught except French.

If we reject categorical statements as to the extreme value (or utter uselessness) of the Russian language, we have here the principal arguments on both sides. It will be clear to anyone with an inside knowledge of the smaller secondary school that Russian cannot be generally introduced there. For Spanish and Italian, however, there might be great possibilities in these schools, as they are easier languages, having points of contact with both Latin and French.

But there seems to be no reason why the average public school should not include Russian among the modern languages studied. If when a boy reaches a certain form he can learn Greek or German, why cannot Russian be substituted for German, and the latter made an extra subject or a third alternative? Surely our foremost educational institutions can surmount the difficulties which present themselves! In staffs of from twenty to forty masters, all men of university training, there must be many potential teachers. Every public school is sufficiently well off to provide

for one master a short period of study in Russia. The cost to the pupils of the few necessary books is no impediment, and by most parents a small extra fee, if it should be necessary, would be willingly paid. The language need not be taught to boys of small ability: German and Spanish could be made alternatives, except in a very few schools, and in practice it would probably be found that the Russian classes consisted of able boys intending to follow a business career, who at present, for no other reason than that they have brains, spend countless hours each term writing Greek prose and Latin verses.

Much more remains to be said, but the teacher can be trusted to discover it for himself. A large part of his work, under present conditions, lies along the path of the pioneer—exacting work indeed, and beset with perplexities, but its own reward to an extent that no other work can be. A Russian, Spanish, or Italian class in a public school to-day is working under well-nigh perfect conditions. The pupil is ideally receptive; his interest is captivated by what is novel, and maintained by the constant comparisons of the new language and those he already learns; his sense of triumph (or power) is stimulated by the smallest progress; his perseverance is assured by the fact that he understands the ultimate motives for which he has undertaken the study of the language, and recognises them to be very powerful ones. And though little of this is explicit to his own immature mind, it is none the less an inspiration to him and to his teacher, and an earnest of certain success.

#### THE TEACHING OF SCIENCE IN AMERICAN SCHOOLS.

By HILDA J. HARTLE, B.Sc.

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HAVING recently returned from the United States, where I spent a year in studying American methods of education and visiting many educational institutions, I was much interested in reading Prof. R. A. Gregory's paper entitled "Science for the Rank and File," which was reported in full in the February issue of THE SCHOOL WORLD. Prof. Gregory's plea for a more human touch, and a more generous use of suitable reading material, in our science work, together with a larger proportion of descriptive lessons, would find a ready hearing among many of the American professors with whom I talked.

Many of the teachers criticised much of our laboratory work as waste of time, and as a device for keeping pupils merely occupied and for saving the teacher the trouble of too much thought. It was pointed out to me that we were neglecting the example of some of our wisest teachers, such as Huxley and Tyndall, and also omitting the study of their writings from the high-school course.

In all its institutions America caters very definitely for the average person. In many of the courses the cream is skimmed from the subject, and served up in an easily digested form. Of course there is danger here, but we in England should profit by popularising some of our science knowledge. The American teacher, though at present rarely so good a craftsman as his English compeer, is full of ideas, and the germs of a number of the changes desired by Prof. Gregory are to be found in many of the American schools and colleges. Not that American science teaching is better than our own; on the contrary, it errs even more, but in the opposite direction. It over-emphasises information at the expense of method, and devotes barely one-third of the science period to laboratory work. If, however, we could add what is good in the American science course to what is excellent in our own, we should produce a better-balanced scheme than at present, with greater benefit to the average child.

I propose, therefore, to give an account of science teaching as I found it in the States, beginning with the work in the high school, and dealing afterwards with the work done with the younger children.

To prevent misunderstanding, it should be noted that in the American system of free State education all children attend the elementary school from the age of six to that of fourteen, and that after this age children are transferred to the high school, which is planned to give an additional four-year course of study. What is spoken of as "a first-year course in science" refers to the course taken in the first year of the high school, and is thus the work planned for children of fourteen or fifteen years of age.

A distinctive feature of the American high school is to be found in the "elective" system. This means that for the most part, with the exception of English, no subject is compulsory, the pupil being allowed to "elect" whatever subjects he pleases, provided the required number be chosen. Although science is compulsory in only a few schools, I found many students taking at least the first-year course. Another difference from the English schools

is the "blocking" of subjects. In America the pupil usually studies only four subjects a year, devoting one hour a day to each subject, together with one hour of preparation. In a country so vast as the United States one naturally finds much diversity of method and subject-matter in the teaching of science, and with reference to the first-year course, taken by pupils before any specialisation is allowed, there is much controversy and keen discussion. What follows refers to this first-year course unless otherwise stated.

Speaking generally, it is true to say that far more physics than chemistry is taught, and that the teachers believe that chemistry is too abstract for the American child. There is a growing desire to link the science lesson with the home life of the child, so that in the schools of the Middle West much of the work centres in the testing and growing of corn, while in the East the science lesson deals chiefly with the physics of everyday things. In the East "physics" and "science" are almost synonymous, so that at Springfield (Mass.) I found no biology taught in any high school in the city. I observed a great deal of excellent teaching in physics, the teachers showing much skill and enthusiasm in originating experiments, and the lessons being illustrated with a wealth of practical applications. Much of the practical work in electricity is concerned with the devising of electric bells, electric signals, and mechanical toys. In some of the schools that I visited the students were studying pressure, and this work included the examination and reading of the gas meter at home, together with the calculation of the cost of lighting the house. This emphasis on the economic side is very characteristic of American teaching, and will be referred to again in connection with the teaching of Nature-study.

The strong point of the American teacher is the large amount of information about everyday things that he introduces into the course, and his eagerness to correlate his work with that of other subjects. For example, the physics teacher will give a course of lessons on colour to the art class, and a few lessons on heat to the students in cookery. Also, the American manufacturer welcomes visitors, considering their presence an opportunity for advertisement. Thus even school children are made welcome and given much information, together with much literature and many samples for home consumption. It is therefore not difficult for a teacher dealing with sound to arrange a school visit to an organ factory, or for a botany class to be taken to a starch factory, where the many products made

from starch can be observed through all the stages of production. Without desiring the elaborate equipment of the science departments of the modern school, one cannot help envying the American teacher the numerous opportunities for lantern and kinematograph demonstrations which he enjoys. The kinematograph is to be found in all the latest schools, even in remote country districts where it is used, in addition, as a source of amusement and instruction for the adult members of the community. In spite of its disadvantages, this apparatus may be made very useful adjunct to science teaching.

On a school visit, which I was invited to make with the pupils of a hygiene class in a New York school, to a milk-pasteurising factory, it included a moving-picture demonstration of all the processes, from the milking of the cow to the dispatch of the bottled milk from the factory to the home—a most instructive lesson to city children.

As one travels further west the type of the first-year course changes, as may be gathered from the following headings of chapters taken from a book recently emanating from the University of Chicago, and intended for the age of pupil under discussion. They read as follows:—

Some characteristics of the air; Temperature changes and the seasons; The water of the air; The weather; Structure of air, molecular theory; Composition of air, atomic theory; Relation of air to food manufacture; Dusts, moulds, and bacteria of the air; Distribution of bacteria and other disease germs; Ice, water, and steam; Water pressure; Climatic influences of bodies of water; Commercial relations, the great lakes; Water supply and sewage disposal; Work by running water; Work; Mechanical energy and heat; Natural forces upon the surface of the earth; Physical structure of the soil; Soil water, drainage, and irrigation; Erosion and sedimentation; Life in the soil; The plant covering of the earth; Absorption from the soil by plants; The world's food supply; Utilisation of food in the plant; Nutrition of animals; Hygienic aspects of nutrition; Reproduction in plants and animals; The struggle for existence; Parent and offspring.

The book contains a good deal of readable material, and is used together with a laboratory manual on similar lines. It will be seen that the course contains much that was included under the heading of physiography in the old days of the South Kensington examinations.

Some of the universities, too, are trying to

introduce a more humanistic point of view to their studies. At the University of Chicago I visited lectures on the classification of plants which included short summaries of the life and work of famous botanists, while the Department of Education of the same university I found that the writings of Huxley and Tyndall, the current journals of geography, and weekly papers such as the *Scientific American* were recommended as suitable reading material for the pupils of the high school.

In the rural areas the science course is often vocational in character, and much interesting work along the lines of agriculture is being done.

The science for children under fourteen is based on Nature-study, though a few attempts are being made to work out a scheme of practical elementary science for children of twelve. This is notably the case in the elementary school which forms one of the demonstration schools of the University of Chicago. In some quarters the opinion is held that for this the best Nature work will be done in connection with activities such as the Boy Scout movement rather than within the school walls.

In America there is more co-operation between the different institutions than in England. Thus a good deal of responsibility is taken from the teacher by the work of institutions like the Nature-study Department of Cornell University, and the Children's Museum at Brooklyn, New York. The latter, originally supported by voluntary contributions, is now maintained by the city education authority. Its activities include the giving of lectures to children both during and after school hours, the giving of special lectures in the schools themselves, and the holding of classes for teachers. In the grounds of the museum there are some 200 gardens which are rented to the children for a nominal sum, the greater part of the work in which is done by the children in the long summer vacation under the direction of the museum authorities. On the day of my visit here Boy Scouts were having a lesson on the structure and uses of diverse kinds of timber, some children were reading in the library, others were being conducted round the exhibits by a young guide, while still others had come after school to attend a lantern lecture. Besides this, two classes in gardening for teachers were going on. A room of considerable size was set apart for the work in connection with the packing and distribution of seeds for the production of home-grown plants.

Many other examples of the supplementing of the ordinary work of the school by outside agencies might be given.

In many of the schools I found the best gardening work was done in the long summer holiday, which extends from the middle of June until towards the end of September. This was particularly the case in the much-advertised schools of Gary (Indiana), which keep open doors, not only through the summer, but also on Saturdays and Sundays throughout the year! In the gardening course each child keeps a record of the cost of production and of the profits made by the sale of the produce. Work in the home garden is encouraged, and the interest of the parents is often gained by the utility of the crops produced. In many schools the course includes the teaching of methods of canning and preserving. As one teacher expressed it to me: "The motto is 'From seed to can.'" In the schools of the great corn-growing States much of the teaching arises out of the testing of seed and the growing of corn and vegetables. This bias towards the economic side in all biological studies is very marked.

In lessons on plant and animal life stress is laid on the ravages of fungus diseases and insect pests, while in hygiene the duties of a citizen in matters of sanitation, and his responsibility with regard to a pure milk and water supply, will be pointed out. Excellent excursions are often planned for the purpose of studying the birds, plants, and physical features of a district, but no American teacher would fail to point out the uses of the wood of the trees met with, and the advantage or otherwise to the farmer of the birds identified. We in England would offer an excellent course to our advanced students on plant diseases, but we do not take important and interesting facts of this nature and present them to the young pupil to anything like the same degree.

In all the schools that I visited I was very much impressed by the excellence of the arrangements for the school library. In many cases this was a branch of the public library, situated in the school itself and in charge of a fully trained librarian. This school librarian gives to the children, from time to time, lessons on the use of a library, and also much help as to methods of study and choice of books. Every effort is being made to acquire suitable reading material in science, and several of the publishing firms are eager to produce the type of book which the schools are demanding. In America education is for the multitude, and throughout everything is planned for the average person.

### THE HOUSE OF EDUCATION AND ITS WORK.

THE name of Miss Charlotte Mason and the House of Education at Ambleside have long been held in honour in many middle-class English homes. She has done so much to standardise the work of the governess, to give it guidance and inspiration, that parents and pupils have good reason to be grateful. The Parents' National Educational Union sprang out of her work. The *raison d'être* of the union is the organisation of the home-school on Miss Mason's principles. The success of the movement has been so great that it is beginning to invade the preparatory schools, and its final triumph touches the primary school itself. A school (or rather a class) in the West Riding area is allied to the union and is working on its lines. Nobody is likely to grudge the primary school anything which good home-teaching can suggest.

What, then, are the distinguishing characteristics of Miss Mason's educational message, and how far are they applicable to the classrooms of an ordinary school? The theoretical basis is summed up in some three pages of a pamphlet on "A Liberal Education." The main points seem to be: (1) That a child is a person with a person's spiritual capacities and requirements; (2) that knowledge in variety is as necessary to the mind as food is to the body, and that a child's native curiosity is an expression of this need; (3) that his powers of thought and imagination suffice for his apprehension with little outside aid, and that his mind is so constituted as to lead him to retain the profitable and to reject the unprofitable; (4) that stimulus to learning is not therefore necessary, though some moral control is wanted to secure the act of attention—a control which comes from the certainty that he will presently be required to recount what he has learned; (5) that the child is to go his own pace; (6) that books, the very best, are to take the place of lessons.

Written in this summary form, some difficulties immediately stand out. Number (4) especially seems a little artificial. Recounting what one knows suggests either a vain display or a pedagogic artifice, neither of which finds a parallel in a healthy child's attitude towards food for the body. Again, very little acquaintance with children casts doubts upon number (3). It may be right to let them find their own way to essentials, but their path will be devious and their progress slow. Of course, a well-chosen text-book will serve as a guide, but in this case it is a

teacher who is at work, and a teacher who has had children specially in his mind. Finally, as to number (1), we are in some doubt about what Miss Mason means by a person, and her principles as worked out in defining curricula seem to deny personality, as we understand it, to the teacher!

This brings us to a consideration of the practical side of the P.N.E.U. scheme. Programmes of work, very clearly and definitely set out, are published for the use of members, who must give an undertaking not to lend them to others. Space does not permit our going into details, and we must admit at once the usefulness of an organisation of the kind. It serves the same purpose as the International Sunday School Programmes of study in their particular sphere. Few parents or governesses are capable of drawing up complete and satisfactory schemes. The P.N.E.U. not only supplies them ready-made, but also conducts termly examinations upon them, the papers of which are "carefully designed to give pupils opportunity of telling what they know." Moreover, the programme is so full that revision is impossible—such at least is the ideal.

All this is admirable for those who might, and presumably members of the union feel the need. Yet we could wish that some loophole were left for variation in programmes laid down. If the history period is fixed as 1689-1837, why must we take from certain pages of Arnold-Forster? Presumably for the convenience of examination. No other reason is conceivable. We recognise the difficulties of parents and even of governesses, but what of professionally trained teachers? Ought they to hand over their professional conscience to this new educational church? It is an excellent thing that children should study pictures, but if Miss Mason chooses Pieter de Hooghe, who bores us, why should we communicate this particular incapacity of ours to our pupils? The personality of the teacher is, in fact, left out of the account—surely a serious drawback to the whole idea. Miss Mason is wholly unaware of the difficulty, but she feels that to allow people to subscribe for the programmes on the understanding that they may make such use of them as they think would endanger a great idea and do serious harm to the cause of education! Such a point of view is courageously frank, but a little papal in tone, is it not?

A glance at the examination paper suggests an authoritarian attitude which some of us hoped was passing out of

ucational practice. We cite some examples of questions which are surely beyond the range of a schoolgirl's judgment.

**FORMS V. AND VI.:** Discuss the style of the Epistle to the Romans.

Discuss and confute the Utilitarian scheme of morals.

Name the desires which minister to mind and show how much each may degenerate.

State and illustrate half a dozen characteristics of poetic diction.

What have you to say of the thought of Aristotle and Plato?

The rest are more commonplace. How the reproduction of second-hand judgments can be regarded as evidence of a well-treasured mind we may still doubt. Indeed, Miss Mason's whole psychology seems to run counter to the current biological view. There is a world of difference between her school ideals and those outlined, for example, in Dewey's "Schools of To-morrow," and we cannot resist the conclusion that the future lies with Dewey rather than with Miss Mason. In spite of all this, the solid fact that a great work for the home-school has been accomplished must be gratefully admitted. The insistence on the provision of good books is surely sound, and if Miss Mason's influence should do something to put the book *the good book*—in the place of the oral lesson which is still the *pièce de résistance* in so many primary schools, both teachers and taught would gain. More books—rows them temptingly displayed and accessible in every classroom—are a crying necessity in our schools, but it would be a doubtful blessing if a teacher's taste and individuality were to be subordinated so completely as Miss Mason demands in her own organization. Is it not still true that "the letter killeth, but the spirit giveth life"?

#### PROPOSED EXAMINATION FOR CLASS I. OF THE CIVIL SERVICE.

**T**HIS Lords Commissioners of H.M. Treasury appointed, on November 16th, 1916, a committee

To consider and report upon the existing scheme of examination for Class I. of the Home Civil Service; To submit a revised scheme such as it may judge to be best adapted for the selection of the type of men required for that class of the Civil Service, and at the same time most advantageous to the higher education of this country;

And in framing such a scheme, to take into account, so far as possible, the various other purposes for which the scheme has hitherto served, and to consult the India Office, the Foreign Office, and the Colonial Office as to their requirements, in so far as they differ from those of the Home Civil Service.

The committee consisted in the first place of Mr. Stanley Leathes, Sir Alfred Ewing, Sir Henry Miers, Mr. H. A. L. Fisher, and Prof. W. G. S. Adams, with Mr. D. B. Mair as secretary. On Mr. Fisher's appointment as President of the Board of Education his place on the committee was taken by Dr. W. H. Hadow.

The report is dated June 20th, 1917. It contains a brief historical summary tracing various modifications in the examination during the last sixty years, during which the number of subjects gradually increased to thirty-eight. There follows a section on the original conception and development of the Class I. scheme, a criticism of the existing scheme, and an account of the scheme proposed by the committee. According to this, candidates will all take Section A, which consists of the following (maximum for each subject added in brackets): Essay (100); English (100); questions on contemporary subjects, social, economic, and political (100); questions on general principles, methods, and applications of science (100); translation from one of ten specified modern languages, Latin being also an option for those who take two modern languages in Section B (100); a *viva voce* examination (300). Total for Section A: 800 marks. Section B consists of fifty-three optional subjects, candidates being allowed to take subjects in this section up to a total of 1,000 marks. We have not space to enumerate all the subjects, but mention as examples that modern and ancient languages alike have 200 marks for translation, composition, etc., and 200 for history and literature; there are two English literature sections (200 each); general economics (200); political organisation (100); mathematics, lower (400) and higher (400); physics, lower (200) and higher (200); agriculture (200). Thus it is possible to get 800 out of the permitted 1,000 by taking only classics, or modern languages, or history, or mathematics, or science. In addition to these two sections, candidates may take translation in a language not already taken in Section A, and to this a further 100 marks are allotted.

It is impossible in a brief article to do more than express very sincere appreciation of this scheme, and we trust that all interested in our higher education will provide themselves with a copy of the report. The criticisms and arguments are stated in restrained and convincing language, and the hopes aroused on seeing the names of those serving on the committee have not been disappointed. The scheme marks a great step forward in the history of competitive examination. Section A affords a test, such as we have never had

before, of general education in its best sense and of personality. Section B, on the other hand, makes it possible for an honours man at any university to compete without having to take up subjects merely for the sake of scoring marks.

Perhaps the honours school that suffered most under the old scheme was that of modern languages. They receive, at last, a fair chance. (It is true that the committee suggests an examination of a very high standard, and it remains to be seen what the syllabus and the papers will be like.) Further, there is considerable encouragement to candidates to acquire a reading knowledge of two modern languages, as shown by the power to render fairly difficult passages into good English. This appreciation of the importance of modern languages is all the more welcome as there has been in some quarters a disposition to let them receive scant justice.

The Neglect of Science movement has also had its effect, and the compulsory paper of questions on science will exert a most salutary influence. Indeed, the general effect of this scheme will be to encourage specialisation, but to discourage narrowness of specialisation, one-sided development.

It is earnestly to be hoped that this excellent scheme will be adopted, not only for Class I. of the Home Civil Service, but, above all, for the Indian Civil Service as well, for there are far more posts for competition in the latter, and the effect would be greater in proportion. It is true that the Royal Commission on the Indian Public Services has recommended that selection for the Indian Civil Service should be made at a much earlier age (eighteen or nineteen) than that (twenty-two to twenty-four) for which the present scheme is intended. The adoption of this recommendation would, in our opinion, be a very grave mistake. At a time when we are building the upper stories of our new secondary schools, and making alterations and repairs in our old ones, we do not want a fresh set of specifications to confuse our architects' plans. No arguments we have seen in favour of lowering the age of admission to the Indian Civil Service competition have convinced us that we should be justified in introducing such a seriously disturbing element into our secondary schools. We want steady, wholesome work for our boys of sixteen to eighteen, free from excessive pressure. Many a boy crammed—it is not only "crammers" that cram—for a university scholarship has had little power or initiative left when the coveted prize has been won; and the intense competition resulting from throwing open

the Indian Civil Service examination schoolboys would have the most disastrous effects.

That incidentally the committee leads us to believe that our apprehensions on this score may be ill-founded is one of the many points which make us grateful for this quite admirable report.

#### PERSONAL PARAGRAPHS.

**M**ISS ROSAMOND F. SHOVE, M.A. (Dublin), at present second mistress of the Notting Hill High School, has been appointed assistant lecturer in education at University of Leeds and sub-warden of University Hall for Women. Miss Shove was educated at Blackheath High School and at Girton College, Cambridge. While at Cambridge she passed the Natural Sciences Tripos, and afterwards spent a year under Prof. Seward upon research in comparative anatomy. In addition to her wide experience of teaching in Liverpool, in Wales, and in London, Miss Shove has taken an active interest in educational questions outside schools, having been a member of the executive committee of the Association of Assistant-mistresses, president of the London branch of that association, and a member of the executive committee of the Association of Science Teachers. She has contributed to *THE SCHOOL WORLD* and several other educational journals.

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**MR. H. C. BARNES-LAWRENCE** has retired from the headmastership of Weymouth College, an office he has now held for fifteen years. At the close of the summer term the Dean of Canterbury, the chairman of the school council, presented to Mr. Barnes-Lawrence, on behalf of the boys, old boys, and friends, a testimonial of £300, the interest on which will form a Barnes-Lawrence Prize Fund. The retiring headmaster has been a schoolmaster for more than forty years, and was headmaster of Perse School, Cambridge, before going to Weymouth College. Mr. R. R. Conway, who has been second master for many years, is to act as headmaster-in-charge of Weymouth College for the period of the war.

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**MISS FLAVELL** has retired from the post of headmistress of Tiffin Girls' School, Kingston-on-Thames, a school with which she has been connected for thirty years. Miss Alsop, senior assistant-mistress, who has served the school faithfully for twenty-seven years, has also retired. Both ladies received parting gifts.

on the staff and the former and present pupils.

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MR. ALFRED MOSELY, C.M.G., died on July 22nd at his residence at Hadley Wood. Mr. Moseley was a Bristolian and was educated at Bristol Grammar School. He went to Kimberly, acquired a claim in the De Beers diamond field, and so was able to retire from business and to return to this country. Mr. Moseley is best known among educationists on account of the commissions he organised and sent to the United States. In 1902 an industrial commission, and in 1903 an educational commission, were sent at his expense. In 1907, 700 English school-teachers, at his instance, visited the United States and Canada, and later Mr. Moseley arranged for a return visit to this country by as many American teachers. These visits did much to bring about a closer union and the better understanding of the educationists of the countries concerned.

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It is interesting to look back at the names of the Moseley commissioners, whose reports were published in 1904. Among them are R. Blair, Esq., assistant-secretary for technical education of the Department of Agriculture and Technical Instruction, Ireland"; "T. Gregory Foster, Esq., assistant-professor of English in University College, London"; "W. C. Fletcher, Esq., headmaster of Liverpool Institute"; and "the Rev. H. B. Gray, master of Bradfield College." Dr. Gray, in his section of the report, commented upon the phenomenal development in commerce and industry in the United States, and asked, What part do the *methods* of education, as distinct from the *spirit*, pursued in the United States, play? Since then Dr. Gray has seen great deal more of Canada, the United States, and other countries, and his latest word to educationists at home is to be found in "Eclipse or Empire?" In that book he and Mr. Turner discuss the comparatively slow development of commerce and industry in his country.

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It is Mr. A. E. Wynne, not Wyrne, who is to act as headmaster of Blundell's School, Tiverton. Mr. Wynne is an old boy of King Edward VI. Grammar School, Birmingham, and was at Beaumaris School for some five years before going to Dover College.

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LIEUT. J. E. MALLIN, of the Intelligence Department, was mentioned in Sir Douglas

Haig's dispatch of April 9th. Mr. Mallin was for some time on the staff of the Strand School, and was one of its able, energetic, and effective modern language masters. He was also a hard worker on behalf of the Assistant-masters' Association. He was largely responsible for the excellent chapter on Germany in the association's "Report on the Conditions of Service" of 1910; and later he became the secretary of the association's Parliamentary committee, one of its most important committees.

ONLOOKER.

### THE EDUCATION BILL.

M R. FISHER'S Education Bill was introduced in the House of Commons on August 10th and read a first time. As the President of the Board of Education explained in introducing the Bill, it does not attempt to deal with university, secondary, or technical education; it does not touch the scholarship system; and it leaves on one side the establishment of a satisfactory pensions scheme for teachers in secondary and other schools at present outside the State scheme of pensions. Other pressing educational reforms, too, have had to be deferred for the present.

At the same time the Bill marks a great advance, and if in due course its chief provisions are embodied in an Act of Parliament, we shall have reached a turning point in English education and shall be justified in looking forward with confidence to the due completion of a reasonably graded and comprehensive scheme of national education.

Further progress with the Bill cannot be made until the autumn, but its introduction before the recess provides the opportunity for a full discussion of its provisions by education authorities and teachers before the second-reading debate, and enables them to inform their representatives in Parliament as to the opinions on the proposed changes of the men and women who will be called upon to interpret the new Act.

The general framework of the Bill and the actual proposals of the Government were explained with consummate ability by Mr. Fisher in his introductory speech, and copies of the "Bill to make further provision with respect to education in England and Wales, and for purposes connected therewith" (Bill 89), price 3d. net, can now be obtained through any bookseller, so that teachers can easily acquaint themselves with the changes it is proposed to make.

The following summary of the chief points

of the Bill has been drawn up from these sources of information.

#### CHIEF PROVISIONS OF THE BILL.

It is proposed :—First, to improve the administrative organisation of education.

Secondly, to secure for every boy and girl in this country an elementary school-life, up to the age of fourteen years, which shall be unimpeded by the competing claims of industry.

Thirdly, to establish part-time, day continuation schools, which every young person in the country shall be compelled to attend unless he or she is undergoing some suitable form of alternative instruction.

Fourthly, the development of the higher forms of elementary education and the improvement of the physical condition of the children and young persons under instruction.

Fifthly, to consolidate the elementary-school grants; and

Sixthly, to make an effective survey of the whole educational provision of the country and to bring private educational institutions into closer and more convenient relation to the national system.

#### PROVINCIAL ASSOCIATIONS.

A duty is imposed upon the councils of every county and county borough to provide for the progressive development and comprehensive organisation of education in their respective areas and to submit schemes to the Board, and in order that this function may adequately be discharged it is proposed to remove the twopenny limit of the amount to be raised for higher forms of education which was imposed by the Act of 1902. The council of a county or county borough will, in other words, plan out an educational policy. Before submitting its scheme to the Board the council will be required to consult the authorities having power in the county under Part 3 of the Act of 1902 with reference to the mode in which and the extent to which any such authority will co-operate with the county, and the Board will be informed as to the co-operation to be expected from any such authority.

There are some educational problems which can be most conveniently considered in relation to an area larger than a county or county borough, and by bodies representing a wider constituency. The supply of elementary teachers, for instance, could be best dealt with in relation to the large areas. So, probably, could a scheme for scholarships to be held at the secondary schools or the universities. Or, again, the provision and utilisation of secondary schools might be more scientifically planned and with less fear of overlapping in the large area than in the small area. It is, of course, possible under the existing law for authorities to combine for any one or all of such purposes.

The Bill provides distinct statutory authority for the formation of bodies which we may call provincial associations. The Board will be empowered by statute to provide for the establishment of provincial associations after consultation with the authorities concerned, the local education authorities being empowered to delegate

administrative and educational functions to these associations, and conversely the associations being empowered to exercise any function so delegated. There will be county and county borough authorities obliged to submit comprehensive schemes of education for their respective areas, and these will gradually supplemented by provincial associations for those educational purposes which are most conveniently dealt with in relation to areas larger than those of the county and county borough.

#### ELEMENTARY EDUCATION.

The education given in public elementary schools is not to be considered an end in itself, but a stage in the child's education destined to lead to other stages. Local education authorities, under Part 3 of the Local Education Act of 1902, will be required to make adequate provision, either by special classes or by means of central schools, for what may be termed higher elementary education. The Bill provides not only for the introduction of practical instruction at appropriate stages, but also for the preparation of children for further education in schools other than elementary, and for transference at suitable ages to such schools.

The Bill includes a series of proposals designed to improve and to strengthen the existing fabric of elementary education so as to secure to every child in the kingdom a sound physique and a solid groundwork of knowledge before the period when the part-time system begins. The establishment of nursery schools for children under five years is encouraged, and the local education authorities are empowered to raise the age at which normal instruction in the elementary schools begins to six, as soon as there is an adequate supply of nursery schools for the younger children in the area.

The law of school attendance is to be amended as to abolish all exemptions between the ages of five and fourteen, and further restriction is to be placed upon the employment of children during the elementary-school period.

The first of these proposals rests upon the belief that children are introduced to the normal instruction of public elementary schools at too tender an age. At four or five years sleep and play are far more important than letters, and, wherever the home is good, the child should be encouraged to stay with its mother. It is not proposed to compel the provision of nursery schools, but to enable such schools, attendance at which must be voluntary, to be aided from the rates, and in the development of these schools, which will often be open-air schools, real improvement in the health of young children may reasonably be looked for.

The second proposal involves as its consequence the abolition of what is known as the half-time system. The system has been condemned by every educationist and every social reformer. It is bad for the physique of the children and it is injurious to the intellectual prospects of the half-timer.

The third measure for improving elementary-school education is the further regulation of the employment of children during the period of daily elementary-school life. The Government desires a full period of school

le, unimpaired by the competing claims of employment, for all children of the working population. At the present moment the effect of our elementary-school education is greatly harmed by the work which is imposed on children out of school hours. They are able to be employed for three hours before the school opens and for some hours after the school closes, and the general opinion of inspectors is that of all reforms affecting elementary education there is none more vital than the enforcement of strict limitation of the employment of children in their school-going days. The Bill proposes that no child under twelve shall be employed for profit. No child under fourteen shall be employed on any day on which he is required to leave school before the close of school hours or after 8 p.m. on that day, or on other days before 8 a.m. or after 8 p.m. If the local education authority should decide that it would be wise to continue elementary education in the elementary schools either for the boys or the girls in their area or of boys or girls following particular occupations in that area up to the age of fifteen they shall be empowered to do so.

#### CONTINUATION SCHOOLS.

The most novel provision in the Bill is that, with certain exceptions, every young person no longer under any obligation to attend a public elementary school shall attend such continuation school as the local education authority of the area in which he resides may require for a period of 320 hours in the year, or the equivalent of eight hours a week for forty weeks. The main exceptions are the following:—Attendance at schools will not be required in the case of a young person who has received to the satisfaction of the Board suitable full-time instruction up to the age of sixteen, or has passed the matriculation examination of a university of the United Kingdom or an examination recognised as an equivalent to that, or is shown to be unsuitable or deficient for part-time instruction. In other words, every young person who has not received a full-time education up to the age of sixteen shall receive a part-time education up to the age of eighteen, either in schools provided by the local education authority or in schools under its direction, such as the schools established by manufacturers in their works.

The Bill provides that part-time instruction shall be given by day; it must be taken out of the employers' time, and provision is made to ensure that the young person who is required to attend continuation classes shall not be worked unduly long hours during the days on which the classes are held, and that he or she shall be given a reasonable interval for food, rest, and washing between work and school. The classes are not to be held on Sunday or any holiday or half-holiday which a young person is accustomed to enjoy.

#### PHYSICAL EDUCATION.

The Bill attaches great importance to physical education. Physical training is already an element, perhaps not a sufficient element, in our elementary-school curriculum, and grants have recently been sanctioned for organisers of physical training in public

elementary schools. The present Bill gives physical training a place in continuation schools. Every boy and girl in those schools will receive physical training. It goes even further. It empowers the local education authority to establish nursery schools for young children, to maintain playing-fields, school baths, or school game centres, and equipment for physical training, and it extends the powers and duties with regard to medical inspection now possessed by the local education authorities in the case of elementary schools and secondary schools provided by them, and continuation schools under their control.

#### ADMINISTRATIVE PROVISIONS.

Among the administrative provisions, three call for special comment. The first relates to the inspection of schools and other educational institutions not otherwise liable to inspection by Government Departments. Those are public schools and private schools. It is not proposed to compel those schools to submit to inspection by the Board, but it is proposed to empower the Board, on request, to inspect such schools free of charge. Public schools and many private schools, which obviously reach, or nearly approach, the standard of the Board for secondary schools, have been able for the last ten years to obtain free inspection, and the names of several well-known schools of both classes are to be found on the published list of the Board. But a very large number of schools at present do not fulfil this condition, and it is clearly in the interest of the parents and of the community that those schools should have the benefit of such experience and guidance as the Board can put at their disposal.

The second point relates to educational information. There is probably no civilised country in Europe in which the Government knows so little of what is going on in the field of education as England. The Board has no official knowledge at all of a large number of schools and educational institutions of an important kind, and very scanty and precarious knowledge of those that are outside the system of grants. Not a few private-venture schools are frauds on the public. The teaching is deplorable; the buildings are inappropriate; there is no adequate security for the health and progress of the pupils. The Government does not wish to put down private schools. But in view of the large sums of public money invested in education, it is thought that the Board should be in a position to inform itself and Parliament more exactly than it can now do as to the quantity and quality of the total provision of education in the country. The Bill provides that, where the necessary information is not otherwise available, the Board may call upon every school or educational institution to furnish particulars.

Thirdly, the Bill provides for the consolidation of all grants made for elementary education. It has long been recognised that a block area grant made to the local education authorities in respect of its general education system is more satisfactory than a number of different grants allocated on the basis of particular schools and particular subjects of activity.

### NEW IDEALS IN EDUCATION.

THE fourth conference of men and women interested in the new ideals in education met at Bedford College on August 14th-21st. The subject of discussion was continuation schools, and, as beffited a conference of pioneers, the note throughout was of the highest optimism. Indeed, everyone took for granted that the new continuation schools must and would begin at the point at which the most enlightened of the present-day schools, whether elementary or secondary, had arrived. Speaker after speaker urged that nothing but the best could be of any use, that to scamp these schools educationally, socially, or financially would mean certain failure from the outset. The best men and women, working in the very best environment, ready to give body and soul to the work : nothing less than this would avail.

Naturally, in a conference that exists to advocate the utmost liberty, the dominant note was freedom. Compulsion to come to the school was the only compulsion to be tolerated, and that was a temporary necessity which, if the schools were what they ought to be and can be, would pass away. This note of freedom rang through every address, alike in Mr. Fisher's ideal of England as one grand university whose members should be every man and woman of the country, and Mr. Roscoe's magnificent plea for preserving in our youth that spirit of adventure, that vision of the New Jerusalem, that impetus to advance, so essential to the world's progress, but now stifled by tradition and authority and the fetters that each generation so anxiously binds on the feet of the next. The same strong feeling appeared in the appeal of Mrs. Green, speaking as a woman doctor in close touch with the girl victims of their own "damped-back vitality," and in that of Miss Alice Woods not to force all girls into the one groove of domestic interests, while Prof. Bompas-Smith called for self-government and a keen sense of comradeship between pupils and teachers, and Mr. Dove Keighley happily described the continuation school of the future as the "withdrawing-room" of our industrial life. Everywhere the cry arose that the school should be a place of joy, of liberty, of life, where each boy and girl might learn to express himself amid beauty and leisure and friendly comradeship.

This call for the development of the sense of beauty was indeed a dominant note in the discussions of the conference, sounding most clearly and finely in Prof. Rothenstein's plea for the arousing, not merely of the appreciative, but also of the creative instinct, which lies dormant in every child.

Quite as insistent as the demand for freedom was the claim that the main trend of the work should be educational rather than vocational. Mr. Fisher pointed out that the change in our industrial processes, involving acts of mere repetition by the worker, has caused a demand for increased leisure, and with it must come the education for leisure. Mr. Roscoe urged that the transcending reason for the creation of these schools is that the youth should become a member of human society. Mr. Spurley Hey also expressed the view that it is a social rather than an economic

end at which we must aim, while Prof. Bompas-Smith warned us that any attempt at purely vocational instruction would be suspected by Labour as intrigue of the capitalist to enslave still further the wage-earner. Dr. Nunn raised a protest against integrating life into work and leisure, and urged that we must also reform the industrial life and make it human, but though the conference felt he was right, the general thought seemed to prefer to take one thing at a time. Mr. Mansbridge gave his audience a vision of all that a continuation school might mean to a nation, in which the craftsman should maintain the state of the world with his whole body, mind, and spirit, a democracy where all service should receive equal recognition, and in which it was realised that to do less than one's best was to defraud the community.

Even for rural schools Mr. Christopher Turner urged that half of the eight hours a week should be given to books, and Mr. Hatton and Mr. Ashby, the latter speaking with a depth of passion and a breadth of economic vision won from a great personal experience, claimed for the rural worker his heritage something more than mere technical training.

No space remains to do more than mention the most interesting day of "experiments." This conference devotes one day to the discussion of educational experiments actually in process in our schools, and Mr. Holmes expressed the hope that it might form the nucleus of a future "educational clearing-house." It is undoubtedly one of the most valuable features of the week. The last day was devoted to "nursery schools."

### EDUCATIONAL REFORM IN FRANCE AND GERMANY.

THE Higher Education Sub-Committee has submitted to the Education Committee of the London County Council a memorandum summarising the "Projet de loi sur l'éducation des adolescents" presented to the French Chamber of Deputies in March last, and also a report on the reform of education in Germany. We print below some extracts from the memorandum.

#### OBJECTS OF THE FRENCH BILL FOR THE EDUCATION OF ADOLESCENTS.

(1) To co-ordinate the various partial schemes of continuation education already under consideration, in order to balance their conflicting claims and fill in the gaps they leave, by (a) ensuring that every pupil shall be given some sort of preparation for his future career, and incidentally that every child shall be taught a trade; (b) balancing the physical (and military) education and vocational training by a scheme of general education which will, at least in its higher stages, treat of the laws and principles underlying the "facts" acquired at school. In particular, the history of France will be used as a foundation for a study of French political institutions and the theories on which they are based.

(2) To develop and link up with the system of obligatory continuation education the various voluntary

tinuation classes or educational agencies already existing. They may be utilised to provide tuition in subjects not provided for in the minimum curriculum established by the new Bill. They will be subject to the same regulations as obtain at present in the case of private schools—i.e. properly qualified staff, satisfactory course of studies, equipment, etc., are required and assured by State inspection.

(3) To apportion the time devoted to the various sections of the programme so as to avoid over-pressure and lighten so far as possible the obligation to attend classes for so many years. To this end the period of continuation education is divided into two—for boys fifteen—seventeen and seventeen—twenty, for girls sixteen—sixteen and sixteen—eighteen. During the first period 300 hours' attendance will be required, and the course will comprise—for boys, vocational training, for girls, domestic science; some physical exercise; and general education, rather didactic in method, consisting only of readings of good authors on various subjects. During the second period 200 hours' attendance will be required. For boys, the course will consist of physical and elementary military training and general education in the form of lectures, discussions, and "series" on history, geography, politics, economics, and kindred subjects: for girls, the general education will be on the same lines, but they will study, in addition to the ordinary domestic subjects, home nursing and the rearing of children. At the end of the third year of the first period, and at the end of the second year of the second period, pupils may take an examination exempting them in each case from staying on in the final year of the course.

(4) To simplify the curriculum of the elementary school so that the school day and the school year may be shortened, thus releasing teachers for work in continuation schools. The general education will be in the hands of the regular teachers, and in special subjects they will supplement the technical instructors, where necessary.

(5) To provide for suitable extension and remodelling of school buildings so that classrooms for adolescents may be attractive and well supplied with books, etc.

(6) To institute a *livret scolaire*, which will be a record of pupils' work and attendance at school from the age of twenty years of age. Failure to complete the prescribed course will be punished by inflicting certain disabilities.

#### EDUCATION IN GERMANY.

The agitation for drastic reform of the German educational system had already begun before war broke out. During the first year of the war there was a lull, but since then the campaign has been conducted with skill by the German elementary-school teachers, by prominent educationists like Kerschensteiner and Rein. Though it is by no means impossible for pupils of German elementary schools to pass on to secondary schools and afterwards to the universities, the elementary-school system is essentially an isolated institution. Its teachers are unable to study at a university because they have not the "certificate of maturity" from a higher school which is required for

matriculation, and its pupils are prevented in many cases from taking advantage even of the free places in secondary schools, by the fact that the elementary curriculum is so planned that the transition from elementary to secondary school is impossible without private coaching, by the preference given to pupils of preparatory schools, by lack of maintenance grants, and by the allocating of free places to children whose parents would have sent them to a secondary school in any case, but are glad, for one reason or another, to be exempted from payment of fees.

This policy of isolation has been deliberately pursued by the Prussian Government, and is supported by university authorities and the personnel of the secondary schools. The opposition is probably due in large part to the fact that, before the war, there were not nearly enough posts in the higher branches of the Civil Service and teaching profession for those who had qualified for them by taking a full course at secondary school and university. Consequently a secondary-school teacher or a jurist, after completing his studies, might have to wait five to seven years before securing a permanent appointment, and any influx from elementary schools would only intensify the "struggle for life." However, at the outbreak of the war, the Government committed one tactical error. It indulged in extravagant eulogies of German education, at the expense of the decrepit systems of France and England, of course, but incidentally the effect was to exalt particularly the elementary school and its personnel. The teachers were not slow to take advantage of the admissions in dealing with Government obstructors. "If the elementary-school pupil is so superlatively good," they argued, "why brand him as unfit for higher education, and if the elementary-school teacher is such a capable and devoted individual, why class him as an inferior official and humiliate him by denying him some of the ordinary privileges of citizenship?" Government representatives had to perform some delicate feats of balancing in evolving replies which combined fervid praise of the elementary school with pious hopes for the future and intimations, more or less precise, that nothing more than praise need be expected for the present.

The German Teachers' Association, however, demanded immediate reform, and, with the support of the Social Democrats, inaugurated a propaganda for the "Einheitsschule" ("common school"), the main object of which is "to create a great organisation, employing all the resources of modern psychology to study the children of the nation, to give everyone the opportunity of developing his or her special powers to the utmost, and thus eliminate chance from the mobilisation of talent." To this end the "Einheitsschule" must be (a) uniform for the whole Empire; (b) free; (c) undenominational; (d) organised to place gifted children of the poorer classes on the same footing with regard to secondary and university education as the children of the wealthy.

While the "Einheitsschule" has been discussed for the last two years in books and newspapers, at educational conferences, and from the pulpits of many churches, the most interesting debates have been those in the Prussian Lower House, where the Education

Estimates were presented. In the course of the first debate, in March, 1916, the demand for educational reform was pressed by the Social Democrats and the Progressive "Volkspartei." They demanded the suppression of preparatory schools (*Vorschulen*), which they consider to be not only the chief barrier between the elementary and the secondary schools, but also a direct menace to the efficiency of German education, in that they pass on to the secondary schools a large class of pupils who are unsuited for higher education and who drop out—particularly after getting the "Einjährigenzeugnis"—without completing any definite course of studies. A writer in the *Pädagogische Zeitung* points out that Saxony, which has no preparatory schools, is apparently able to exercise discrimination with regard to the class of pupils admitted to the secondary schools, and gets better results, as statistics relating to the terminal examination (*Reifeprüfung*) show. The following table shows the percentage of pupils in secondary schools who passed the terminal examination in 1911:—

	Saxony. Per cent.	Prussia. Per cent.
Gymnasium ...	9·07	5·69
Realgymnasium ...	5·01	3·38
Oberrealschule ...	3·97	2·89
Average pass ...	6·00	3·98

The project of the "Einheitsschule," that elementary scholars who had completed their school course should be admitted to the secondary schools and get their leaving certificate in five or six years, and the proposal to abolish the preparatory schools, were negatived during the debate. But the members of the Catholic Centre took up the cause of the gifted elementary-school pupils and brought forward motions in which the Government was requested to make arrangements to facilitate their transfer to the secondary school, to provide some equality of opportunity between pupils of elementary and preparatory schools in regard to conditions of entering the secondary schools, and to give maintenance grants to deserving students. All these motions were carried. The Prussian Minister of Education indicated that the probable line of reform would be a development of the "Mittelschule" as a link between the elementary and secondary school of the "modern" type (Realschule and Oberrealschule). It might also be possible to link up the Mittelschule with the Realgymnasium or the Reformschule (which represents 60 per cent. of the Realgymnasien), as in the latter school Latin is only introduced in the "lower third." He undertook to remove at once some of the disabilities of the elementary-school pupil, by adapting the entrance examination of secondary schools to the curriculum and methods of elementary schools, and by guaranteeing that the entrance class should not be filled in future by preparatory-school pupils, to the exclusion of the elementary-school pupil.

In June, 1916, Liberal newspapers (in Prussia) announced that the reforms foreshadowed by the Minister of Education in March were to be promulgated immediately, and stated that the principle for which the elementary-school teachers had been contending—the admission of elementary-school pupils to higher schools without formal examination after three years' attend-

ance at an elementary school—had been conceded. Such an arrangement would, of course, have put the elementary school on the same level as the preparatory. The reactionaries greeted the news with angry protests, and finally the Education Department intervened with an emphatic denial of its intention to introduce any changes of this character.

The new regulations were published on August 30. They dealt only with the subjects and standard of attainment required for admission, at the age of nineteen, into Class VI. of the secondary school. The main modifications were the elimination of much of the formal grammar, and a simpler course in arithmetic. The Vorschule benefits distinctly, as less cramming will be required, but the Volkschule is in much the same position as before.

However, in the course of the debates on the Education Estimates in March of this year, it was obvious that the Minister of Education was being forced to act. At the beginning of the year he had addressed the following questions to all district inspectors—(a) In what elementary-school organisations can a gifted pupil pass into Class VI. of the secondary school without necessitating special arrangements or alterations in the school programme? (b) If such organisations do not exist, what changes would have to be made in the programme to render these transfers possible? (c) Can such changes be made without disadvantage to the other students? If not, suggestions should be made for special arrangements to meet the needs of the gifted pupil.

In the course of his speech he further announced that he was conducting an experimental school at Königsberg on the lines approved by the "Centre" party, and directed attention to similar experiments that are being made in various parts of the Empire, chiefly at Hamburg, Frankfort, Breslau, and Mannheim. The Mannheim experiment is by far the most interesting. The children are admitted to the elementary school at the age of six. During their first year at school they are classified as follows:—(1) Normal; (2) unfit to follow ordinary curriculum; (3) backward as a result, not of lack of ability, but of special circumstances, such as illness, debility, etc. For groups (2) and (3) parallel classes are arranged. Group (2) mains quite apart, the curriculum being planned on a four-class basis. The special course for group (3) begins in the second year, and comprises six or seven classes. The backward child is placed in a class corresponding to his age, and coached up to the standard of his "normal" class, to which he is transferred as soon as he has made up the leeway. If children who are to be sent forward to the secondary school, either at the desire of their parents, or because they have shown special ability, supplementary classes are provided. At the end of three years they are allowed to sit for the entrance examination of any Gymnasium or Realgymnasium and pass into Class VI. of the schools, the preparatory departments of which have been discontinued. Also, in the upper classes of the elementary school, modern languages, machine drawing, and manual work are taught to those of the children who wish to begin such special studies in preparation for their future career.

These changes are significant because, having once admitted the desirability of bridging the gulf between elementary and higher education for the gifted few, Government will have difficulty in keeping the new arrangements within narrow limits, as it obviously tries to do. The Teachers' Association will assuredly not rest content with partial measures, for, amid their campaign for the "Einheitsschule," there is not only a strong desire for educational reform, but a determination to remove keenly felt professional grievances; and their conviction is that only by basing their education on the elementary schools can the secondary-school teacher's escape from their present humiliating position.

### ECONSTRUCTION IN EDUCATION.

THE Teachers' Registration Council, as representative of the teaching profession, has found it necessary in the discharge of its duty under the Order in Council to consider proposals which have been made for reforms and reorganisation in national education, and has adopted the following resolutions :—

- 1) As a fundamental part of national education it is necessary to secure more effective care for the health of children from infancy onwards and more ample vision for their physical welfare and development.
- 2) It is further necessary to provide against the withdrawal of children under fourteen years of age from whole-time attendance at school and to limit very strictly the practice of employing such children as wage-earners out of school hours.
- 3) In no case should a child's schooling be held to complete at the age of fourteen. Facilities for further instruction should be provided by an increase in the number of whole-time secondary schools and by the establishment of part-time secondary schools of various types. Attendance at one or other of these types of school should be compulsory for all young persons up to the age of eighteen, and the employment in any industry of young persons between the ages of sixteen and eighteen years, save in the case of those who attend whole-time up to the age of seventeen, should be accompanied by a statutory limitation of eight hours of labour so as to provide opportunity for attending a part-time secondary school for not fewer than nine hours in each week.
- 4) In order that the nation may derive full benefit from the capacity of its children there should be a much more generous and more equally distributed supply of scholarships and of grants for maintenance during the period of secondary and higher education. The council supports the principle of abolishing fees in secondary schools for the maintenance of which a local education authority is responsible, and also the principle of the provision of a due number of free places in secondary schools which are partly maintained by State grants.

In order, however, that the nation may receive benefit from the general application of such a measure, adequate provision of public secondary-school accommodation should be a statutory requirement in all areas, and the necessary steps should be taken to provide a supply of competent teachers by improving the conditions and prospects of teaching work.

The council supports also the principle that no fees should be chargeable in full-time or part-time continuation schools for young persons between the ages of fourteen and eighteen years, or in other institutions for voluntary part-time education in cases where such continuation schools or institutions are maintained by local education authorities.

(5) In schools of all types it is necessary to provide against the classes being too large to permit of that individual care which is indispensable to physical, mental, and moral development. The number of pupils in the classes of public elementary schools should more nearly approximate to that in State secondary schools.

(6) These reforms in national education will require a large and permanent increase in the number of teachers professionally trained for the work. Such an increase necessitates material improvements in the salaries and prospects, including pensions and retiring allowances, of all grades of qualified teachers.

(7) The function of educational administration is to provide opportunity. The function of the school is to develop a sense of obligation to the community and to foster individual aptitude. In order that it may achieve this double purpose the school should be free to adjust its methods of teaching and the conditions of its corporate life to its own needs and circumstances.

(8) In all educational administration and in the conduct of public examinations fuller use should be made of the services of teachers actually engaged in school work.

### THE UNIVERSITY OF LONDON AND EDUCATIONAL ADMINISTRATION.

THE following memorandum was approved by the Senate of the University of London on July 18th, and has been transmitted to the Treasury, the Board of Education, the Civil Service Commission, the Committee on Science in the Educational System of Great Britain appointed by the Government, and the Royal Society.

(1) Primary and secondary education should be directed towards making active and useful citizens, and should include the development of mind and character and instruction in the fundamental branches of knowledge. Literary, linguistic, mathematical, and scientific studies should be regarded as fundamental branches of knowledge, and each pupil should receive some instruction in all these branches. In the case of pupils who pursue their education beyond the age of sixteen, these subjects should as a rule be continued, and public and secondary schools should not undertake specialised training in professional subjects.

Opportunities for learning Latin and Greek should be given in one or more schools in every educational area.

While it is not desirable that it should be compulsory on all pupils, some form of artistic and manual training is to be regarded as of very high importance.

(2) The teaching of natural science (including physics and chemistry) should be compulsory in all secondary schools, both boys' and girls' schools.

(3) All secondary schools retaining pupils beyond the age of sixteen should be capable of providing instruc-

tion in the science subjects of the entrance examinations of the universities up to the standard required for these examinations.

(4) Special technical day schools, in accordance with local needs, should be established in all industrial centres for boys and girls between thirteen and sixteen years of age who wish to enter the technical (including engineering, chemical, and artistic) industries at the age of sixteen.

(5) In order to secure for science teaching the position to which it is entitled, and which for the benefit of the nation it ought to occupy, the schemes under which the great public schools are administered should in each case contain provisions to the effect—

(a) That the governing body shall include a substantial number of representatives of the learned and scientific societies, and

(b) That members of the governing body shall not hold office for life.

Without such provisions, it is probable that men distinguished by mathematical or scientific attainments will continue to be at a disadvantage in applying for appointment to headmasterships of public schools.

Greek should not be a compulsory subject for entrance scholarships to these schools, and adequate facilities (including equipment) for learning science should be available for, and accessible to, all their pupils.

(6) The number of branches in which a first university degree can be taken should not be unduly multiplied, but students who have taken a first degree in science should be encouraged by the institution of higher (M.Sc.) degrees, especially in technical branches, to specialise in particular branches of science, or in their applications to industry. The preparation for such degrees should include some training in the methods of research.

(7) The present arrangement for the selection of First Division clerks in the Civil Service should be modified so that on every occasion an adequate proportion of those appointed must have had mathematical or scientific training.

(8) In all selections for the higher administrative posts for the Government Departments the work of which is of a scientific or technical character the official selected ought to have received such a scientific training as will fit him to understand the character of the work for the organisation of which he will be responsible.

## ITEMS OF INTEREST.

### GENERAL.

A DEPARTMENTAL Committee has been appointed to inquire into the principles which should determine the fixing of salaries for teachers in secondary and technical schools and other institutions for higher education (other than university institutions), due regard being had to such differentiation in respect of locality, duties, qualifications, sex, and other relevant considerations as is consistent with or necessary for the organisation of the teaching service throughout the country on a system conducive to the efficiency of national education. The committee is not asked to consider the question of the amounts by which existing salaries

should be improved in particular areas or schools, the sources from which the amounts required for the purpose should be provided. The members of the committee are:—Sir H. L. Stephen (chairman), M.P. W. H. Abbott, Miss M. M. Allan, Miss C. R. A. Miss S. L. Beszant, Dr. H. B. Brackenbury, Mr. W. Davies, C.B., Mr. G. D. Dunkerley, Mr. B. Fletcher, Mr. D. R. Harris, Mr. C. S. Jones, M.V. A. Mundella, Lieut.-Colonel H. A. Pow R.A.M.C., Mr. E. Reynolds, Mr. F. Roscoe, Mr. Sharp, Dr. H. Ll. Snape, Miss A. T. Steele, Mr. Talbot, and Miss K. Wallas, with Mr. W. E. Urwin, H.M. Inspector, as secretary, to whom all communications should be addressed at the office of the Board of Education, Victoria and Albert Museum, Exhibition Road, South Kensington, S.W.7.

APPLICATIONS are invited for a limited number of places in the Pilcher Research Laboratory attached to Bedford College for Women. Places are available for post-graduate work in science or in arts, preference being given to research in science, and, at the present time, to any investigation connected with the war. Applicants must state their qualifications, the nature of the research, and the period for which application is made. Further information may be obtained from the Principal, Bedford College, Regent's Park, London, N.W. 1.

THE council of the Royal Colonial Institute, in order to encourage the progress of international studies in the schools of the Empire, has revised the conditions of their essay competitions, and has decided to award silver and bronze medals and prizes of books, instead of money prizes, for the best essays sent in by boys and girls who are pupils at schools either in the United Kingdom or in the outer Empire. There will be two classes, A and B. The subject for Class A (candidates above sixteen years of age) is "A Comparison of the British Empire and the Empires of the Past," and the subject for Class B (candidates above the age of thirteen and under sixteen), "The Work of David Livingstone as an Empire Builder." The essays must be received at the Royal Colonial Institute, Northumberland Avenue, London, W.C.2, before March 31st, 1918, and the regulations can be obtained from the secretary.

A SPECIAL series of preparations has just been placed on exhibition at the Horniman Museum, Forest Hill, S.E., to illustrate the stages in the life-histories of numerous insects which damage the food plants grown in gardens and allotments. Specimens and models showing the damage done are also exhibited, and means of combating the pests indicated. Copies of the leaflets of the Board of Agriculture dealing with the insects shown may be obtained on personal application at the museum.

THE Girls' Patriotic Union of Secondary Schools was established by the Association of Headmistresses in August, 1914. Some four hundred secondary schools, public and private, are affiliated to the union, which is registered under the War Charities Act, 1914. The union was founded to assist schoolgirls in making the best use for their country of their powers of active

vice and self-denial. So early as November, 1914, my schools gave up their prizes in order that the money saved might be devoted to war charities. Some material was purchased which the girls themselves made into garments. Active service was undertaken in connection with the provision of hospitality to our Belgian guests, and also for the sick and wounded soldiers and the troops in training and at the front. Mending and washing were undertaken for hospitals; books were collected for soldiers; winter pads and horses were supplied; motor-cars were utilised for conveying convalescent soldiers for drives; even the little girls in the preparatory classes knitted sponges and slippers. The weekly dance was turned into a sing-party, and many schools gave up sweets for the cause of the war. Socks, mufflers, etc., were supplied to New Zealand contingents, and woollen clothing, etc., and other comforts were sent to the Irish forces. A motor ambulance was presented by one school to the Red Cross Society. Pieces of waste land were cultivated, and girls in their spare time earned money for war aims by gardening. Blackberrying and smoking were carried on for the benefit of wounded soldiers. Old newspapers and bottles were collected and sold. Clothes were washed for the coast patrol. My schools have founded war savings associations and thrifit has become a habit. Last, but not least, it is noted the contribution of more than £5,000 by certain schools of the union for the building and fitting of a set of rooms at the "Star and Garter" home at Richmond for soldiers and sailors totally disabled in the war.

The eleventh annual report of the Executive Committee of the British Science Guild makes the claim is made, believe justly, that the Guild is the only body which seriously endeavoured to show the bearing of the scientific method upon public affairs of every kind. That the work of the Guild, started five years ago, has been on entirely right lines is clearly shown by the account given, in the first section of this report, of recent effort in the promotion of scientific and industrial research. The work of the year 1916-17, described in the body of the report, has been carried out by committees for general purposes, dietetics, the metric system, "science and the State," education, agriculture, and technical optics. It is worth noting that the programme of reform outlined by the Education Committee before the war broke out was a remarkable anticipation of similar programmes which have appeared in recent months. The appendices to the report include, among other interesting matters, the annual reports of the Canadian and the Australian branches of the Guild. But perhaps the most interesting part is the full text of the addresses delivered at the eleventh annual meeting of the Guild at the Mansion House in May last, by Lord Denham, Mr. Fisher, and Mr. H. G. Wells. These three are worth the modest shilling charged for the book. It can be obtained from the offices of the Guild at 199 Piccadilly, W.1.

DURING July the *Times* opened its columns to discussion on the expediency of granting to the head-

masters of our great public schools the right of nominating to Woolwich a certain number of their pupils without examination. This is quite a recent privilege, and although we are sure the heads endeavour to exercise their powers to the best of their knowledge, it is obvious that this knowledge must be derived from the Army class master. Now a man who is teaching boys for several hours a day is not always the best judge of their abilities. He cannot see the wood for the trees, and is apt to think more of the quiet plodder than of the turbulent genius. Besides, as was pointed out, the standard of competition has been so lowered since 1914 that no candidate who cannot qualify ought to be allowed to enter the Academy; for his weakness in mathematics and science will only make him a nuisance while he is there, and if he escapes expulsion his future can scarcely be a happy one. Although the faith in open competition is not what it was twenty years ago, yet a better scheme for choosing our future officers has yet to be devised. Surely, if the War Office needs more cadets, it can take them from the top of the unsuccessful qualified list; or the headmasters should be allowed to nominate only those who have qualified in the six necessary subjects, for to gain 33 per cent. on the present papers should be within the powers of any future gunner or sapper.

THE proposal of the India Office to grant commissions in the Army to Indians is a complete reversal of the policy since 1858. It is to be regarded as a reward for the patriotic action of India during the present war. The two great difficulties, as the *Times* points out, will be the selection of the candidates and the place of their military training. All those who have had to do with the teaching of Indians in this country will admit that among them there are far deeper divisions between classes than among Englishmen. The high-caste Indian who has been to an English public school makes often a charming student, readier and more industrious than the average English boy of the same age. But the lower-class Indian who comes to England after he is sixteen is seldom a success, unless he is placed under very wise guardianship. If he is his own guardian, he treats his teachers with servility or arrogance; the great change in his surroundings makes work difficult to him, and he does not find it easy to make the right friends. It is clear that great care must be exercised in India in choosing the right candidates, and they should be undoubtedly educated in India. When they have gained their commissions, it might be well to attach them for some time to a regiment in England or in the Colonies, in order to broaden their outlook.

IT is strange that *Punch* should be the only reputable journal that still insists on spelling the French slang name for a German as *bosch*. We presume the reason must be that the learned editor fears that *boche* might be pronounced *botch*. For he must be acquainted with the long correspondence that appeared in *Le Temps* now nearly three years ago, in which the late Emile Faguet, M. Paul Souday, and others proved that *oche* was a pejorative suffix, and that *boche* was a shortened form of *alboche*, standing for "allemand."

THE London County Council lately received a gratifying report with regard to the making of munitions. The 150 instructors in woodwork—the normal peace-time staff—have become experts in metalwork, and their high abilities in the new material are an indication of the potentialities of a skilled teaching staff. During the year completed on June 30th last, more than thirty thousand gauges have been constructed in the workshops, nearly twice as many as in the previous year. These workshops were at first inadequately equipped, but the deficiency, especially in high-grade grinding equipment, has been made good. The workshops have been extended, and the report states that both accommodation and skilled staff will be adequate to the increased attention which must be devoted after the war to instruction in workshop processes and production. With the improved equipment of all kinds the Council now trains munition workers of a much more skilled character than during the first year, attention being paid to training of a specific character instead of a more general training as an operator in metal. The number of women trained has steadily increased.

THE July issue of *Science Progress* is the first of a new volume. At least three of the articles contained in it are likely to be of real interest and value to the higher forms of schools. Prof. W. M. Flinders Petrie's "History in Tools," with its sixty outline drawings, will fascinate many boys. It shows how "the spread of forms throughout the ancient world illustrates the movements of trade and of warfare, while the isolation of various types at the same time shows how efficient and self-supporting the ancient civilisations were in most requirements." Mr. J. Reid Moir writes interestingly on "Flint Implements and Palaeoliths," and Dr. Charles Davison contributes a well-illustrated abstract of Prof. Omori's memoirs of the Sakura-jima eruptions and earthquakes of January 12th, 1914, which "are among the most important of recent contributions to our knowledge of volcanic action." Among the essays is one by Dr. R. C. Macfie on some of the evolutionary consequences of war; the author concludes that the consequences will probably be "very unimportant, save the racial results produced by the more stringent selection of women which will follow the war as a result of the decimation of men." The section on recent advances in science, which enables the busy reader to see at a glance the most important scientific work which has been published during the quarter, will in future take first place in the journal.

AN article in the *Journal of Geography* by L. B. Krueger, on "Shipbuilding in the United States," contains an estimate of the reduction in the world's merchant service due to the war. In million tons the merchant ships totalled to fifty; five have been destroyed, the British commandeered nine, other belligerents commandeered three, interned ships amount to four, so that the ships left to do the world's ocean-carrying amount only to twenty-nine, which represents a reduction in the ratio of 5 to 3. As a result freights have gone up on flour fivefold, and on other provisions fourfold. In July, 1914, in the United States, only twelve ocean-going merchant vessels were being built; in March,

1916, the number was 300. Now the total has reached 370 ships, with a gross tonnage of a million and a quarter. The shipbuilding yards occur on the Delaware, "the Clyde of America," and at Boston, Baltimore and New York on the east; at San Francisco, Los Angeles, and Seattle on the west; and at the ports of the Great Lakes, with a chief centre at Cleveland. Recent events give a poignant interest to this American progress in the supremely British industry, the building of ships.

A NAVAL or a military training at H.M.A. Naval Dockyards, Sydney, on the training ship H.M.S. *Tingira*, Sydney Harbour, or at the Royal Naval Military Colleges of Australia, is open to the sons of British parents who are domiciled in Australia; they are native-born Australians. For the Royal Australian Navy naval apprentices must be between four and sixteen; seamen, signalmen, etc., may enrol at sixteen, and be trained until they are eighteen, when they must serve for a period of seven years; commissioned midshipmen must serve for twelve years from the age of eighteen. For the Army, candidates for commissions must be between the ages of seventeen and twenty; they will spend five years in the Royal Military College, and the term of service extends to seven additional years. In view of the possible migration to Australia within the next few years, it is important to chronicle these facts, which announce the commencement of a professional education in both of the fighting services.

AN account of "Education at Aden," by D. Assistant Inspector Kadri, is included in *India Education* for March. There are thirty-one recognised and aided schools, and seven unrecognised private schools. Assuming that 15 per cent. of the total population is of school age, it is calculated that 71 per cent. of the school-age population of the Settlement of Aden go without any education at all. Most of these children are Somalis, who deserve to be educated and trained on the right lines. The local schools are primitive, where old-fashioned, incompetent, and poorly paid people teach by rote in wretched slums the Holy Koran and the humblest rudiments of the three R's. As regards what is called secondary education, the English education of boys in Aden now terminates with the passing of the fourth or fifth standard. The boys get a smattering of English and arithmetic, which enables them to do routine work in the offices, but which does them little good. It would be a great stimulus if scholarships were established to enable a few deserving boys to complete their high school course in Bombay or elsewhere.

AN up-to-date summary of the wool industry of Australia is published in the *Education Gazette* for New South Wales (March). The value of the output for the season ending June, 1915, was about twenty-five millions sterling. Early in the nineteenth century Spain was the great wool producer; by 1820 Germany had eclipsed Spain; by 1850 Australia had beaten Germany. Geographical conditions determine the breed of sheep; merinos are suited to the arid western areas of New South Wales, and Romney Marsh sheep to

ur on the rainy areas near the coast, but the flocks are on the tablelands, and here cross-breds," Leicesters, or Southdowns, find Japan is steadily buying more and more wool from Australia; her purchases now amount to nearly 10 per cent. of the total Australian wool imported into Great Britain, and this amount is more than three times the quantity of wool which is consumed by the Australian factories, which sell their manufactures to tweeds, blankets, and goods. The average prices of wool, when sold in Australian wool markets, show a very marked decrease; scoured wool is 25 per cent. dearer, greasy wool is dearer still. Small wonder, then, that the cost of freights up, tonnage down, and a great demand for Army clothing, we have to pay very enhanced prices for our clothes.

S. A. C. COFFIN, director of education, described Bradford camp schools in *The Child* (July). The schools, each serving a different district, have sprung from the single one of 1914. The sites are the property of the Education Committee; they are clear, dry, wind-swept fields at a considerable height above sea-level, with soil that dries quickly; they command extensive views. One entire department occupies the camp for a week during twenty weeks from May to October. During the summer vacation the camps play centres. A large marquee to hold 250 serves as assembly hall and dining tent. There are three smaller tents, each to hold fifty. The midday meal is provided at a penny per head, and tram fares are paid by the committee. The total apparatus for each child is a notebook and a pencil. A complete syllabus of work has been drawn up by a committee of teachers, but the head-teacher is left free to carry out his scheme at his discretion, and with an eye on the weather. He, possibly, revels in the continuous process of making up his mind as to what is to be done during the next half-hour. A piano is put in the marquee, and two long sandbeds are occupied all day by the younger children. "Not the least valuable part of the training of camp life is to enable one to make the best of adverse circumstances and to develop resource."

PROF. J. E. RUSSELL, of Teachers College, Columbia University, concludes an article on "Scouting for Education" in the Chicago *Education Review* (June) with phrases which apply to all education. You must know that your business is not primarily to make boys, or campers, or students of Nature. All these are means to ends: the real purpose of your office as Scoutmaster is to help boys to translate the Golden Rule into concrete terms. The method you must follow is the simple one of fixing habits and creating situations that invite leadership. Be prepared to measure every activity, every task by its results in character building. Weigh the relative value of the habits you can inculcate. Fix the best by repetition, then strive to locate responsibility. Put on a boy's shoulders all the load that he can carry, increase it as he gathers strength, and reward him according to his service. Splendid as your programme is, it is beyond reach of improvement. Genius gave it life,

and only genius can keep it alive. If it ever becomes formal, if your work becomes routine, if your administration becomes autocratic, you will all be on the high road to oblivion. The call is still for men of vision, men with initiative, men of nerve and daring, men who by every test are fitted to be called "good scouts."

#### SCOTTISH.

THE minute providing for the allocation of the new equivalent grant has been well received in all quarters. The larger school boards which gathered in conference to consider its terms have expressed general approval thereof. Teachers have not yet publicly blessed the minute, but there can be no doubt that their whole-hearted support will be given to it. The Department must be congratulated on the boldness of its policy in allocating by far the largest share of the grant to salaries. There were other conflicting claims, some of which were influentially pressed, but the Department, while recognising their merit, wisely determined to concentrate on the one great educational problem of the time: the status and salary of the teaching profession. The appointment of a special committee to consider the principles upon which allocation should be based is further evidence of the desire to put the money to the best possible use.

It is highly satisfactory to find that £10,000 of the equivalent grant has been set apart for supplementing the pensions of retired teachers. Many of these are in receipt of allowances which, in these days, can represent only genteel starvation. The money at the Department's disposal is limited, but it is hoped some means may be found of increasing the sum available for this purpose, and of removing the restriction whereby participation in the grant is limited to those whose pensions are less than £52 a year.

IN the House of Commons the Scottish Estimates, as usual, appealed only to a small section of the members, but it was satisfactory to find that education proved the main subject of discussion and attracted the largest audience. The urgent need for improving the status and salaries of the teaching profession was generally recognised. Sir Henry Craik declared that the success of the whole educational system rested on them, and it was useless to have fine buildings and elaborate machinery unless we had the right type of men and women to utilise them. The demand for larger areas found general support, but there was a sharp division of opinion in regard to a National Council of Education. Mr. Boland claimed a larger share of the equivalent grant for the voluntary schools, but the Secretary for Scotland was emphatic that this could only be obtained by their entrance within the national system, as in England.

THE report on education in Scotland which has just been issued directs attention to the serious effects of the war conditions on the work in schools, notwithstanding the efforts of teachers and managers to minimise the interference with education. In many districts regularity of attendance and efficiency of instruction have been gravely affected, and the normal

period of school life has been curtailed. In some cases this is due to unavoidable causes, but in others it is the result of laxity in administering the attendance regulations and in granting exemptions. The deficiency in the staff owing to the absence of so many teachers on service is being met by the continuance in service of teachers who had reached the age of retirement, the employment of married women teachers, and the recognition of a limited number of persons of good education but without regular training as teachers. The report also directs attention to the increase in juvenile crimes, as evidenced by police-court statistics. The causes for this must be looked for in the absence of parents on service, the high wages earned by juveniles, and in consequence the earlier assertion of independence of home control. The remedy will be found on a return to normal conditions, when the youthful energy may once again be directed into healthy channels. The average attendance of the pupils shows a decline from 752,566 in 1914-15 to 744,469 in 1915-16. The number of exemptions from day-school attendance has risen from 10,530 last year to 15,059.

THE Senate of Edinburgh University has prepared and issued a memorandum on the subject of the revised conditions for entrance to the Indian Civil Service. On two points it challenges the fairness of the conditions so far as Scottish students are concerned. In the first place, it states that the fixing of the upper limit of age at nineteen does not suit Scottish conditions. Boys leave school usually about eighteen, and before going in for the examination would desire some university experience and preparation. To be of value such experience should extend at least over two sessions. If nineteen were retained as the upper limit this would be impossible, and the Senate accordingly asks that the upper limit be made twenty. It further objects to the syllabus of examination, which again it finds ignores the special conditions in Scottish schools. The basic principle of the curriculum in Scottish secondary schools is its general character. Premature specialisation is avoided so far as possible, and is in every case subordinate to the requirements of a sound liberal culture. The proposed examination encourages specialisation, and, what is worse, a narrow specialisation. Education authorities in Scotland are not likely to scrap their system to meet the needs of these examinations, and the consequence is likely to be a serious decrease in the number of candidates from that country. The Senate accordingly asks that the conditions be revised to give a greater choice of options in the interests of general education.

#### IRISH.

THE objection raised to the rules of the Intermediate Board for 1918 was discussed in the House of Commons on July 19th on a motion by Mr. Boland that the House should disapprove of the system of written examinations in experimental science. His argument was that, suddenly and without consultation with the schools and teachers or public bodies in Ireland, the Intermediate Board, a perfectly irresponsible body, had,

by introducing the written examinations in science, set the principle which had worked satisfactorily sixteen years, and was introducing a method that would be scouted in England or Scotland. Mr. Duke, in reply, refused to agree to the motion. Under Intermediate Board remarkable advance had been made in the appliances for scientific instruction and laboratories; the written examinations which had been introduced in science were at present on their trial, it would not be fair to stop them just now. Parliament had given the Intermediate Board discretion on matters of this kind, and it was unreasonable to suppose that it was incompetent for its work. If the experience gained during the next year showed that change was not satisfactory, then representation should be made to cause a modification.

THE report of the Intermediate Board for 1916 contains a remarkable appeal to the Government for reconstruction of intermediate education with an increase in funds. It condemns the present system as an experience of twenty years as unfair to the schools, the pupils in setting up a false and demoralising idea of the ends of education, and as making for undue rigidity in every direction. The appointment of inspectors, the payment of grants for pupils between the ages of twelve and fourteen on the results of inspection, the only modifications which have been made in the system since it was first established. The Board therefore suggests (1) the abolition of the restriction which makes the school grant entirely dependent on examinations, and (2) the adoption of a system whereby examination and inspection should each have a share in determining the grant. To attain these ends it favours the abolition of the present examinations and the substitution of an examination for an "intermediate," also for a "leaving certificate." The former would be for pupils leaving school about the age of sixteen, the latter for pupils who go through a complete course of secondary education. The school grant should be based on capitation, subject to three conditions:—That the Board should be satisfied as to the efficiency of the school; (2) that a reasonable proportion of pupils should pass the certificate examinations; and that the teachers should possess qualifications to be approved by the Board. The capitation grant should be greater for students between the ages of sixteen and nineteen than for those under sixteen. The matter of pensions should also be considered.

THE Board is very emphatic on the need for increased funds, both to augment the meagre grants to schools and to improve the position of the teachers. The reports of the teachers' salaries grant have shown that out of 1,142 lay teachers only 398, or fewer than 35 per cent., have salaries and security of tenure which satisfy the very modest requirements of the rules of the grant for duly qualified teachers, and there are fewer than forty assistant-masters receiving an annual salary of £200 or more. For the purposes of secondary education in 1913 England and Wales received from the Treasury nearly £888,000, Scotland £287,000, and Ireland nothing, while in England and Wales and Scotland the administrative charges were also defrayed by the Treasury. On the basis of population Ireland

would have been receiving about £100,000 a year plus the cost of administration (about £26,000). Since 1913-14 Ireland has received the teachers' salaries grant of £40,000, which still leaves a balance of £6,000 a year due to her from the Treasury, in addition to Ireland's proportionate amount of the new grants about to be made to secondary education in England. The Board holds that this should be granted once, and, even so, the income at its disposal would be miserably small compared with the sums available in Great Britain, where the local rates give to England about £2,307,000, to Scotland £813,000, and to Wales £162,000, as compared with which the Irish Intermediate Board has from all sources (exclusive of the teachers' salaries grant) a total income of £83,913. Finally, the Board directs attention to two further points. The funds at its disposal have decreased by £1,000 since 1900, and, even including the teachers' salaries grant, the amount granted to the schools is practically only the same as in 1900, while the amount devoted to rewards to pupils has decreased from £19,313 in 1900 to £6,571 in 1916. The other point is that the number of pupils entering for the examinations has largely increased. In 1900 it was 7,608; in 1916 it was 14,176, although since 1913 pupils under fourteen have been debarred from the examinations, and number now more than 6,000. The Board, then, has to deal with more than 17,000 pupils, as compared with 7,608 in 1900.

ASKED as to Ireland's share in grants for secondary education, Mr. Duke stated that this matter would be dealt with after the summer recess, when he proposed to introduce a Bill, presumably on the lines of the recommendations of the Intermediate Board's report.

Mr. DUKE has secured a considerable addition to the sum available for primary education. The equivalent grant proportionate to the sum granted in England was £384,000, and this will be entirely spent in increasing the salaries of the teachers in primary schools. The salaries in the three grades will be increased by amounts varying from £13 to £30 a year, the increases will be more rapid, and promotion from grade to grade will be facilitated, so that the position of the teachers will be distinctly improved.

THE Department announces that it will award in September a limited number of scholarships of the value of £25 each, tenable at the Training School, Enniskillen, to enable the holders to secure training as teachers of white and coloured embroidery. The examination will be held in Dublin on September 25th-27th, and application must be made to the Department not later than September 17th.

#### WELSH.

THE Conference of Educational Authorities convened by the Central Welsh Board, and held at Llandrindod Wells on August 2nd and 3rd, may be said to have been very successful in that the main business for which it was called was completed, though the discussion of many minor matters of great importance to the work of the proposed National Council was postpone relegated to a future occasion. Invitations

were issued to education authorities, who sent ninety representatives, to the University of Wales, its colleges, the theological colleges and other colleges of university rank, and to Jesus College, Oxford, as well as to the intermediate and elementary schools. There were present seventy-one representatives of teachers and teaching institutions, and the thirty-four Welsh Members of Parliament were invited, but only two appeared. The absence of the rest was severely criticised: they had declined to take, as a party, any share in the conference.

IT was evident from newspaper indications during the past few weeks and from conversations before the opening of the conference that there was considerable objection, if not organised opposition, to the establishment of a National Council of Education; this opposition came from the representatives of the larger towns, but was not directly voiced in the meetings, partly because it was made clear that no interference with the present powers of the local authorities was intended. The attitude of the teachers, whose support was sought by both sides, also probably had a considerable influence on the success of the proposal, which they favoured in principle, though there were differences of opinion as to the manner of election of the council. Of the draft resolutions given in these pages last month, the first, calling for the establishment of the National Council, was passed with slight alteration. An amendment asking for the appointment of a Welsh Minister of Education was referred to a small sub-committee to be recast overnight, and the second resolution was also left over until next morning. In the morning session of August 3rd the amendment was brought forward and passed in this form:—"That His Majesty's Government be respectfully requested, in the forthcoming Education Bill, to make provision for the creation of a National Council of Education for Wales, in pursuance of the foregoing resolution, and, pending the grant of complete autonomy to Wales, for the appointment of a Parliamentary Secretary of Education for Wales and Monmouthshire."

THE second draft resolution—that the council should be a body elected by the present education authorities, with provision for the representation of women teachers, etc.—was passed in its original form, the conference rejecting, by 84 votes to 32, an amendment calling for the election of the council directly by the people. The remaining eight amendments were withdrawn by consent, but will be brought forward on a later occasion. An executive committee was chosen to formulate a scheme for the constitution of the council, which should be laid before the Prime Minister by a deputation; and to report to a further meeting of the conference.

It was now possible to go on with the proper work of the second session. The first resolution (*c*), that the National Council should be able, in administering Imperial grants, to take local contributions into account, was dropped. Resolution (*d*), pointing out the disparity between education rates in England and

Wales, and affirming the claim of Wales to increased grants, was passed, having been amended by the insertion of words calling for a compulsory uniform basis of valuation of property for rating purposes throughout the country. In the third session the conference affirmed its faith in popular control of university education, and upheld the principle of adequate and direct representation of local education authorities on the governing bodies of the University. An interesting debate took place on the abolition of all fees in secondary schools and university colleges, but the proposals were deferred as being unworkable under present conditions.

A CURIOUS feature in connection with the conference was the previous circulation among the delegates of a pamphlet dealing with the matters to be discussed from the ultra-nationalistic point of view; the pamphlet, which was anonymous, consisted of a reprint of articles that have appeared in a South Wales newspaper, and the only information vouchsafed to the conference was that it was not an official publication.

MUCH sympathy is felt with Principal Salmon, of Swansea Training College, in the loss of his son, a 2nd Lieut. in the 9th Welsh, who is reported "missing, believed killed in action, July 19th." He was educated at Swansea Grammar School, Llandovery College, and Jesus College, Oxford, where he graduated with honours in history. He was an assistant-master at the George Dixon School, Birmingham, and the author of an "Economic History of England." His last letter, announcing his approaching return on leave, and the War Office telegram giving news of his loss arrived almost at the same time.

ANOTHER tragic coincidence occurs in the death of Lieut. Herbert Glyn Morgan, son of the headmaster of Pontypridd Intermediate School. He was born on the day of his father's appointment to the headship at the opening of the school, and killed on August 1st, his twenty-first birthday. He died fighting with the utmost bravery, being with another subaltern in charge of the whole battalion, after the colonel and all the other officers had been wounded: he has been recommended for the Victoria Cross.

## THE REPORT OF THE EDUCATION REFORM COUNCIL.

*Education Reform, being the Report of the Education Reform Council.* 215 pp. (P. S. King and Son.) 5s. net.

THE air is thick with educational manifestoes, and it is well that this should be so, for there never was a time or an occasion when it was more necessary that all sides should be heard. Even if there were bewildering diversities of opinion on main educational issues, an initial pooling of ideas would be all to the good. But, as a matter of fact, no such bewilderment is discernible in the various essays in reconstruction that have appeared during the past few months. In the May issue of *THE SCHOOL WORLD* several of them were passed in review. It was found, of course, that where one set of recommendations was

vague and general another was definite and specific where one was bold another was cautious and perhaps timid, and where one concerned itself mainly with financial and administrative reform another placed the stress upon the more subtle problem that confronts the thoughtful teacher. But while the reports of different educational bodies deal with the same problem, they were as a rule unanimous in principle, and sometimes even in detail. It is agreed, for example, that the period of compulsory full-time attendance at school should be extended at least to the age of fourteen, that there should be compulsory part-time attendance for at least three years afterwards, that the position and prospects of teachers should be improved, and that improvements for the physical welfare of children should be made.

Though we cannot afford to neglect the systematic views of any competent educational body, there are reasons why a special value should be attached to the report of the Education Reform Council. In point of comprehensiveness, the only scheme that bears comparison with it is that of the Workers' Education Association, to which also, but for different reasons, a special value should be attached. The strength of the latter lies in the fact that it expresses the intense earnest convictions of a body in which the profession does not predominate, and which is not disposed to limit its view to what seems practicable at the moment. The strength of the Education Reform Council's report lies in the fact that on the whole it is the work of distinguished experts, who are well aware of the detailed bearings of every recommendation they make, and who are able to give closely reasoned statements in support of those recommendations. The reader should be warned that the mere reading of the summary programme of the Reform Council, without attention to the reports of the several committees, will give quite an insufficient idea of the work done in the views formed by the council. The committees on administration, university and higher technical work, the training of women, secondary-school curricula, elementary-school curricula, the training and status of teachers, the school medical service, character training, and examinations all present reports which are invariably interesting, and in some cases extremely valuable.

Within the limits of a brief review it would, of course, be impossible to traverse the whole of the ground thus marked out. We can only select a few topics for special notice. With regard to the curriculum of part-time continuation schools, we note that whereas the Workers' Educational Association advocates purely general or liberal instruction, and whereas the National Union of Teachers admits only "an industrial or commercial bias" between the ages of fourteen and eighteen, the Reform Union points out, surely with much cogency, that the line between what is liberal and what is vocational is not so easily drawn. There are vocations and vocations; and whether a course of instruction shall be partly vocational or not should depend upon whether the future occupation does, or does not, provide a study of sufficient cultural value. Really of a piece with this argument is that of another committee on the reform of university curricula. On one hand we have the ideal of a liberal education in the old sense which has dominated the public schools and other secondary schools, and to some extent the universities. On the other we have the ideal of a technical training with a view to immediate utility. The committee thinks it reasonable to conclude that the fundamental method of the old system is faulty, and that "the assumption that a technological training cannot also be liberal is not valid." This conclusion represents a view which has

to be seriously reckoned with in our efforts at instruction.

One of the most striking and valuable documents in the volume under review is the report of the committee on "elementary and further education." The committee holds that, on grounds both of administrative convenience and of psychological propriety, the age of eleven and a half or twelve should be regarded as epochal. The whole school period is therefore regarded as falling into three stages, of which second and third are especially closely related." There are (a) the primary period, the stage of elementary education proper, from the age of six to eleven and a half or twelve; (b) the intermediate period, from eleven and a half or twelve to fourteen; (c) the final period of part-time attendance, from fourteen to eighteen. A great question here is whether the middle period shall be closely organised with the primary period, as now the case in our elementary schools; or whether it should be organised with the final period in new institutions which must be created. If the former course is adopted, the work of the senior classes in the elementary schools must be thoroughly haulled and reorganised. There are strong reasons preferring the latter course, but it may prove practicable, especially in urban areas. In country districts, however, the way is clearer for ending the elementary education at twelve, and keeping part of the course mainly in the hands of women; establishing central schools receiving their pupils at the age of eleven and a half or twelve from a group of tributary villages, and retaining them during the rest of the post-primary period.

We leave this report with regret, so full is it of things which we should like to quote or refer to. The author of Dr. Whitehead's recent book on "The Education of Thought" will expect to enter a very healthful atmosphere when they turn to the report of his committee on examinations, and their stations will not be disappointed. Nor must we forget to mention Dr. Garnett's foreword, in which he gives the general scope of the report, and compares its findings with the plan outlined by Mr. Fisher in his memorable speech. To the Education Reform Council and its officers, and to the officers of the various sectional committees, the educational world has to be grateful for the sincere and solid work which has been put into this report.

## E CURRICULUM OF THE PUBLIC SCHOOLS.

*The Public School System in relation to the Coming Conflict for National Supremacy.* By V. S. Bryant. With a preface by Lord Rayleigh. 78 pp. (Longmans.) 1s. 6d. net.

URING the past few months considerable attention has been given in these columns to the various schemes of educational reform that have been put forward, all of them very comprehensive in their scope. The small volume before us, published under the auspices of the well-known Committee on the Neglect of Science, Mr. V. S. Bryant addresses himself to the one but important subject of the public-school curriculum, and, in natural connection therewith, the education given in preparatory schools. Even if it did come to us commended by Lord Rayleigh's impressive foreword, the book would obviously claim attention, for in his educational views the writer is an acknowledged, and, we will add, a worthy, disciple of Huxley; and he has had "the somewhat rare combination of several years' experience in commercial and industrial spheres, both at home and abroad, together

with ten years' insight into education and methods at one of the great public schools of this country."

Let us all clearly understand that Mr. Bryant's theme, though restricted in its scope, is of no less than national importance. Whilst present social conditions last, it will remain broadly true, as he says, and as others have said before him, that the public schools undertake "the early training of those who are destined to become the statesmen and professional men of the future, the leaders of industry and the masters of men." The public school cannot, therefore, claim to be a sort of sacred object, upon which the outsider may not lay his unholy hands. If the products of the public schools are to be, in the future as in the past, the "masters of men," the kind of education given in the public schools is a matter of vital concern to the intelligent man-in-the-street, and not merely to a governing and professional caste. If the coming democracy answers our hopes and expectations, the public schools must either mend their ways or else lose much of their influence.

Mr. Bryant is no rabid advocate of science. He argues his case temperately and reasonably, and upon an appropriate basis of fact. We are, indeed, inclined to regret his assertion that science—i.e. physical science—furnishes "the indispensable training of the mind." The training of the mind is an affair of method, and it is both possible and desirable to introduce scientific method into the teaching and learning of the so-called humanities. We should have been better satisfied if he had based his plea upon the simple ground that the elementary facts and principles of science are so essential to the proper conduct of life that they ought to enter into everybody's general education, and that specialised training in science ought to be as accessible, and as much encouraged, as specialised training in anything else. Nothing is gained by trying to make out that physical science furnishes an altogether unique and superior "training of the mind." Spencer tried to make this out. Huxley did not. And everyone knows which of them was the wiser and the saner advocate.

But one may cordially accept a conclusion without binding oneself to all the arguments adduced in support of it, and the practical case made out by Mr. Bryant is surely irrefutable, except, of course, that opinions may very well differ as to certain details. The preparatory-school curriculum, as is well known, is dominated by the requirements of the public-school scholarship examinations. The present curriculum, as shown by an average of thirty-two schools, assigns, out of 25½ hours per week, 7 hours to Latin, 5 to French, 2 to English, 5½ to mathematics, 3½ to Scripture and history, and 2 to geography.<sup>1</sup> History, geography, and divinity, considering the time spent on them, are very well taught; English is most seriously neglected; the teaching of mathematics is not on sufficiently practical lines; drawing and manual work come in only as hobbies if there is time for them, whilst elementary science and music are conspicuous by their absence. Briefly, Mr. Bryant suggests that the second language, Latin, should be postponed until the boy is thirteen years old, and that the time thus made available should be devoted to pursuits, now neglected or ignored, which are far more suitable for young boys.

As for the public school, as soon as a boy reaches its classical side "he becomes entirely a specialist, and his general education is completed at the age of thirteen or fourteen," with the result that "the general public has no conception of the terrible waste of the finest material in the world which is taking place in the workshops of the public schools," for "certainly not more than 10 per cent. ever reach the stage of real

<sup>1</sup> In cases where Greek is begun before the age of thirteen, this is practically always done at the expense of mathematics.

appreciation of the language and literature of Greece and Rome." This premature and ineffective specialisation Mr. Bryant would sweep entirely away, and would substitute "a perfectly general education for all up to sixteen to sixteen and a half years." That Mr. Bryant here stands on firm psychological ground is illustrated by the fact that the very same view is widely held even as regards the children of the masses in their continuation schools, though there is far greater reason in their case for early specialisation.

Into the details of Mr. Bryant's plans for a constructive policy we have not space to enter, and indeed it would scarcely be fair to do so. He has done a real service in putting so clearly and concisely the issues at stake. We hope the book will be widely read, for in frank and general discussion lies the chief hope, so well expressed by Lord Rayleigh, "that the next generation of English public-school boys will have more to show for their time spent in school than could be claimed for ours."

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*La France: French Life and Ways.* By G. Guibillon. 276 pp. (Dent.) 2s. 6d. net.—This is an excellent book. It treats of much that may be found in works on French daily life, but it deals with its material in an interesting way and in a readable style. The reviewer has never met with a book on similar lines that he could read through with the pleasure he has read this. Illustrations enhance the value of the text. Information will be found on a host of topics, from Chamonix to Hyères, from la Bourse to le "Courbet," and from *un agent de ville* to *un lit breton*. There is a useful phonetic vocabulary and a good index. Certainly a book to recommend to anyone seeking a modern book on France written in present-day French.

*A Rapid French Course for Students in Evening Classes, Private Students, and Others.* By Randall Williams and Walter Ripman. 235 pp. (Dent.) 2s. 6d. net.—This new course is designed for learners of more mature years who would find the contents of a book, written for children, wearisome. It is a Dent's course grown up and illustrated. One finds materials well arranged, a useful *liste de mots* (with pronunciation indicated), grammar, and exercises at reasonable intervals. In spite of all that has been so well done for them, it is not unlikely that learners of seventeen and upwards will be wearied by the rather heavy conversation of M. Bayard and his friends, even though it is broken by *les abolements joyeux de Castor*.

### Classics.

*Homeri Opera.* Tomus iii., *Odyssey* i.-xii. Recognovit T. W. Allen. Editio altera. (Clarendon Press.) Paper, 2s. 6d.; cloth, 3s.—This is a new edition of Mr. Allen's Homer in the Oxford Classical Texts. It is ten years ago that classical scholars had first to thank Mr. Allen for having fulfilled the pious wish of Ludwich—that some one would carry on the work begun by him, and finish the collation of the seventy odd MSS. of the *Odyssey* in the libraries of Europe—and Mr. Allen has already attained a European reputation on things Homeric; but we may take the appearance of this new edition as an occasion to tender our appreciation of his continual labours, and also to express once more our sense of the greatness of the debt of all classical scholars to the Oxford University Press for the production of such splendid texts at such a reasonable price. This is not

the place in which to review the details of Mr. Allen's latest researches. Let it only be said that he has added two new MSS., one of which is added to *family d*, and the other goes with two other re-invented MSS. to form a new *family s*; Messrs. Grenfell and Hunt's researches upon the Egyptian papyri, though the crop is not so rich for the *Odyssey* as it was for the *Iliad*, yet yield four additions to the *codiculum*. In his new preface Mr. Allen discusses the principles which he has followed upon such things as digamma, genitives in -oo, and the omission or retention of the augment, etc.

*M. Annaei Lucani de bello civili.* Lib. viii. Edited by J. P. Postgate. cxii+146 pp. (Cambridge University Press.) 3s. net.—Although one of the Cambridge University Press Series, this is no mere school book, but a detailed and scholarly presentation of a somewhat recent author. This is obvious enough from the introductory matter, which is in bulk almost one-half of the volume; the notes, though extensive—as is, inevitable when dealing with so abstruse and erratic a writer as Lucan—are yet remarkable for their ciseness and relevancy. In spite of the fact that Postgate has had in mind both schoolboys and maturer scholars, he has yet kept his notes strictly pertinent, and he is to be congratulated upon the introductory matter alone. But it is the introductory matter which forms the chief feature of this volume. It deals very reasonably with such things as Lucan's historical credibility, his relation to other chroniclers, and brings out in a very well written historical sketch the full psychologically dramatic nature of the poet's story. There are excursions on the route of his life and other interesting points, together with a critical apparatus remarkable for its instructive comments. Whether for Sixth Form boys at school (and they ought to read this eighth book) or for the Lucan scholar, this edition is indispensable.

*Marcus Aurelius Antoninus: A Selection from the Meditations of.* Translated by J. E. Jennings. xii+131 pp. (Blackie.) 2s.—Mr. Jennings has translated a selection, equivalent to about half the original in bulk, from the "Meditations," with the object of setting forth what he calls the "social side" of the Stoicism of Marcus Aurelius. That fatal ("dare we say overrated?") book is one on which a "selector" may justly try his hand—we wonder many have read the whole without tedium—and Jennings has made his selection with great care and scrupulousness. But we think that he has spoilt the benefit which he might otherwise have bestowed on the English reader by overloading his pages with footnotes and cross references. Many pages have as many as twenty, and it may well be imagined that the effect of so many numerals jotted about the text does not enhance the charm of an author whom we can hardly have always found somewhat insipid. *de gustibus . . .* and that is not Mr. Jennings's fault in any case. There is a short, but adequate, introduction, which treats of the relations of Marcus Aurelius to his age and predecessors, and of the general doctrines of Stoicism.

### English.

*The Compleat Schoolmarm.* By Helen Hamlyn. 100 pp. (Blackwell.) 2s.—The writer of this verse-squib would probably not wish to be taken seriously; why, then, has she in her dedication and in the opening and the closing "verses" struck so portentously solemn a note? It is Ian Hay who calls schoolmasters the worst paid and the best rewarded,

on, and a good deal of the pity which the comfort-fortune-hunter pours over teachers, men and men, is wasted; their own self-pity comes generally in the square pegs. For some, no doubt, this amus-skit upon the harried, learned, myopic, college-monstrosity is fact, and it will make them wince. scenes, classroom, hockey field, "dance," prizes are ludicrous but faithful photographs, and among fervid, phantom-pursuing crowds flit Girton and Durham and their Oxford sisters. *Si quis mihi plus aula.* In a mystic circle on the cover of the run the words:—

"That motley drama, oh! be sure,  
It shall not be forgot,  
With its phantom chased for evermore  
By a crowd that seize it not,  
Through a circle that ever returneth  
Into the self-same spot.  
With much of madness and more of sin  
And Horror the end of the Plot."

withstanding these "prave 'ords," Miss Hamilton's manese, abridged, will delight some common-  
as, and perhaps a stray Sixth, Form where khine-made" girls set the tone of the machine.

*Warden Mac.* By C. R. Johns. 99 pp. (Jarrold.) £1.—This is a brightly written story of a dog. All lovers will appreciate it, though the young may scent the too evidently didactic purpose. It is atest against all experiments with animals, whether are carried out in the laboratory or by the trainer. not so poignant as the studies by Willy in "La : chez les bêtes"; but these are very much for the &. Anyone can find interest in Mr. Johns's racy

### History.

*Note-book of Mediaeval History.* By C. Ray-  
id Beazley. viii+224 pp. (Clarendon Press.) net.—The notes given in this handy book of refer-  
e cover the period A.D. 323-1453. They are divided  
) twenty-seven sections, corresponding to short  
nological divisions of the 1130 years surveyed. In  
b section a few notable "general points" are in-  
ited, and then there follows a dated summary of  
most important events of the years included in  
section. Students of the history of the Middle  
es will find this little volume very serviceable. Not  
y will it remind them of the dominant facts in the  
tical development of Europe from the fall of  
man paganism to the fall of Christian Byzantium;  
will also tell them much that in all probability they  
not know of the literature, art, and general civilisa-  
of medieval Christendom. In modest and un-  
entious form it gives evidence of wide and catholic  
dition.

*Modern Man and His Forerunners.* By H. G. F.  
urrell. xii+189 pp. (Bell.) 7s. 6d. net.—This is  
important and profoundly interesting book. Its  
pe is indicated by its sub-title, viz. "A Short Study  
the Human Species, Living and Extinct." It dis-  
usses the origin of the human race and its increasing  
derivation from kindred mammalian species. It  
summarises the evidence for the former existence of a  
pe of man—the Neanderthal type—which, from  
uses that cannot be even guessed, has wholly dis-  
appeared from the earth. It describes, from archaeo-  
logical remains, the culture of the other men of the  
d Stone Age, who also, in Mr. Spurrell's opinion,  
we left no descendants. The most fascinating sec-  
on, however, is that which treats of the civilisation  
f Neolithic man and his modern successors. Mr.  
urrell's conclusions are disquieting and monitory.  
ivilisation, it appears, brings physical and moral  
degeneracy. Hitherto the degeneracy has been coun-

tered and corrected by periodic incursions of unspoiled barbarians. Now, however, civilisation, with its attendant evils, is penetrating every part of the world, and there are no longer any noble savages left to act as saviours of mankind. Mr. Spurrell is delivered from pessimism only by taking refuge in agnosticism; we cannot know what new correctives and restoratives the future may produce; the human race has survived many foes in the past, it may therefore survive civilisation.

*Notes on European History.* By D. L. Lipson.  
40 pp. (Blackie.) 1s. net.—These notes, specially in-  
tended for Army candidates, relate to the three  
centuries 1600-1900. They take the eight most impor-  
tant movements of the period, beginning with the  
decline of Spain and ending with the expansion of  
Russia, and present in tabular form the causes, pro-  
gress, and results of each in turn. They constitute, in  
short, a cram-book, and if taken by themselves without  
supplementary reading, they can fulfil no more lofty  
purpose than to enable a candidate with a memory  
to deceive an examiner without perception. If, how-  
ever, they are used by a conscientious student, they  
can be made to serve the useful end of fixing attention  
on the main essentials of a number of cardinal his-  
torical events.

*The History Teacher's Magazine.* Vol. viii.,  
Nos. 1-5, January-May, 1917. (Philadelphia: The  
McKinley Publishing Company.) 20 cents each num-  
ber.—Each volume of the *History Teacher's Magazine*  
contains ten monthly parts; none are issued for July  
and August. We have before us the first half of  
vol. viii. The special feature of this section is the  
inclusion of two long and valuable reports; one, in the  
January issue, giving the findings of a committee  
appointed to consider the place of social studies in  
secondary education; the other, in the April number,  
summarising the proceedings of a conference held to  
discuss the scope and method of the general college  
course in history. The Committee on Social Studies  
strongly emphasises the civic aim of education; it  
should have for its "conscious and constant purpose  
the cultivation of good citizenship." The committee  
also exalts the place of history in civic education:  
"history to be of value in the education of the boy or  
girl must function in the present." The idea is sound,  
although it is expressed in technical jargon. The  
Conference on College Courses comes to a  
general agreement that the proper foundation  
for a university study of history is a thorough  
grounding in medieval and modern Europe; only  
one important opinion was expressed in favour of  
concentration upon English history (for American  
students), and that on the curious and interesting  
ground that English history is really European history  
conveniently restricted geographically. As to method,  
considerable divergence of view was manifested: Prof.  
Hayes, of Columbia, condemned lectures, and advo-  
cated "the quiz"; Prof. McDonald, of Indiana, with  
memories of the inspiring courses of the great Har-  
vard teachers, Haskins and Emerton, in his mind,  
spoke a strong word for the lecture method as em-  
ployed by the masters. The February issue contains  
a useful discussion of the educational value of history.  
In the May number an estimate is attempted of the  
influence of the war on history teaching in Europe;  
it appears that in America, as in Britain, attention  
has been directed in an unprecedented degree to the  
history of Europe in the nineteenth century.

### Geography.

*Poland as a Geographical Entity.* By W. Nalkow-  
ski. Preface by J. Fairgrieve. 63 pp. Map. (Allen  
and Unwin.) 6d. net.—This booklet is one of the

publications of the Polish Information Committee. Poland is transitional; there East meets West; the steppe farmer, the Eastern (Greek) Churchman, the Slav of the east meets the coal-fed factory worker, the Western (Roman) Churchman, the Teuton of the west. There the wide plain of the continental east narrows to the great coastal plain at the base of the peninsular west; there one year the winter is mild and British, another year it is severe and Asiatic. On this view of the environment, the author bases his interpretation of the Polish character; torn by the constant struggle in opposite directions, the Pole is careless of the morrow, disinclined for systematic work, frivolous, and lives from hand to mouth. Can such a people become a nation under such conditions? The author believes that, awakened to-day to a fierce passion by their past and present history, the Poles can accomplish such a feat. We are inclined to agree, but with one proviso, that there shall be peace; then the Pole will gain from his "transitional" situation.

*Philip's Record Atlas.* Maps, 128 pp. Index, 128 pp. (Philip.) 6s. net.—This is a cheap atlas, and with its index provides a handy means of following the fortunes of the war. The colour-scheme is political, and serves readily to distinguish the areas of the several countries. Physical features are not very well treated, since the symbol for mountains is the old-fashioned caterpillar, and the maps are in some cases over-loaded with fine lines which tend to obscure the rivers. By an ingenious arrangement of colours, distances from London are indicated in terms of the hours necessary for the journey, and there are very clear maps of both the Western and Eastern theatres of war.

#### Science and Technology.

*Advanced Text-book of Magnetism and Electricity.* By R. W. Hutchinson. Two volumes. 372, 468 pp. (Clive.) 8s. 6d. net.—This is a new edition, rearranged and largely rewritten, of Dr. Stewart's "Higher Text-book of Magnetism and Electricity." The sequence of the main sections has been altered to magnetism and electrostatics, which form vol. i., and electrodynamics in vol. ii. The scope of the book is that of the final degree examinations of the universities. In all sections the text has been brought well up to date. The last four chapters of vol. ii. are devoted to electric oscillations, electromagnetic waves, and wireless telegraphy; the passage of electricity through a gas; radio-activity; and to electronic theories and the new physics. These chapters are well written, and they contain much information in comparatively small space; it is probable that the author here felt more freedom to write independently of the earlier text-book. It is unfortunate that so many of the old diagrams reappear in this new edition; they do not do justice to the text, and obsolete diagrams tend to make a book unattractive. Instructions for numerous experiments have been added, and in several parts it is evident that the practical or experimental side of the subject has received much consideration.

*Elementary Science for Engineering Apprentices.* By W. McBretney. vi+74 pp. (Longmans.) 1s.—In this little book the author has endeavoured to provide for the needs of engineering apprentices attending the second of the two preliminary technical evening courses, and to place in the hands of the two types of teacher in charge of these courses—the secondary- or elementary-school teacher and the engineering draughtsman—a book which may enable each better to understand the other's point of view. The book opens with simple measurements and mensuration, and

then treats of mass, weight, density, and the pressure of gases. The composition and resolution of moments, and the centre of gravity are then dealt with and are followed by sections dealing with expansion due to heating, temperature, and change of state. The book contains many illustrations, several of which could be improved by reproduction to a larger size on better paper. There is a set of exercises for home work at the end of each chapter, but no answers are given. Suitable experiments are included, and a note and approve of the author's opinion that his methods may easily be overdone, and that he has attempted too much in this direction. The book is bound in paper covers, but we are afraid that it will scarcely endure the handling to which it will be subjected by the average engineering apprentice. Its contents are sound, and treated in a manner likely to interest the students for whom it is intended.

#### Miscellaneous.

*The Directory of Women Teachers, 1917.* 424+133 pp. (Year Book Press.) 10s. 6d. net.

*The Girls' School Year Book (Public Schools).* lxxii+632 pp. (Year Book Press.) 5s. net.

A hearty welcome will be extended by all educational workers to this third issue of "The Directory of Women Teachers." It is four years since the last edition appeared, and it may be reasonably expected that the modest hope expressed in the editor's preface as to future circulation will be more than realised, for only should every school, education office, and educational association purchase a copy, but the voluntary should also find a prominent place in every reference library. The directory gives particulars of more than 10,000 women teachers, and provides the most comprehensive list of secondary schools for girls available.

The new issue of the "Year Book" has been revised and brought up to date. It provides an excellent record of all matters of interest to parents, schoolmistresses, and girls in connection with secondary education.

#### EDUCATIONAL BOOKS PUBLISHED DURING JULY, 1917.

(Compiled from information provided by the publishers.)

##### Modern Languages.

"En Campagne." By Marcel Dupont. 10s. (Harrap.) 1s. 9d. net.

De Beaumarchais: "Le Mariage de Figaro." Edited by E. F. Langley. 262 pp. (Oxford University Press, American Branch.) 4s. net.

##### English: Grammar, Composition, Literature.

"War Speeches, 1914-1917." Edited by B. Ginsburg. 226 pp. (Clarendon Press.) 2s. 6d. net.

"A Contemporary Short Story." By Harry Baker. 288 pp. (Harrap.) 5s. net.

"English Extracts and Exercises." By F. Pritchard. 256 pp. (Harrap.) 2s. net.

##### History.

"Portugal, Old and Young: An Historical Survey." By G. Young. 350 pp. (Clarendon Press.) 5s. net.

"A Handbook of Modern European History." By S. E. Maltby. 128 pp.+folded charts. (Headline.) 6d. net; interleaved, 2s. net.

"Green's Short History of the English People for School Use." Part iv. "Epilogue, 1815-1914." Alice Stopford Green. (Macmillan.) 2s. 6d.

"Handbook of Civics for Australia and New Zealand." By F. Thorn and E. Rigg. 122 pp. (Oxford University Press.) 2s.

**Geography.**

"Macmillan's Geographical Exercise Books." With questions by B. C. Wallis. Key to V., "Asia and Australasia," 48 pp. (Macmillan.) 2s. 6d. net.  
"Philip's Record Atlas." 130 pp. (Philip.) 6s.

**Mathematics.**

"Introductory Algebra." By Wm. Farquharson. 6 pp. (Harrap.) With Answers, 2s. net; without answers, 1s. 6d. net.  
"Practical Book-keeping." By G. Johnson. 430 pp. (Harrap.) 5s. net.

**Science and Technology.**

"Science and Industry: The Place of Cambridge University Scheme for their Combination." (The Redescript, 1917.) By Sir Richard T. Glazebrook. iv+142 pp. (Cambridge University Press.) 1s. 6d. net.  
"Naval Architecture." - Part i. By J. E. Steele. (Cambridge Technical Series.) vi+142 pp. (Cambridge University Press.) 5s. net.  
"Chemistry in the Service of Man." By Prof. Alexander Findlay. Second edition. (Longmans.) 6s. net.

"The Flying Book. The Aviation World Who's Who and Vade-Mecum Industrial Directory. 1917." (Longmans.) 3s. 6d. net.

"Soil Conditions and Plant Growth." By Dr. Edward J. Russell. Third edition. (Longmans.) 6d. net.

"A Class Book of Organic Chemistry." By Prof. B. Cohen. viii+344 pp. (Macmillan.) 4s. 6d.

"A Text-book of Practical Physics." Parts i. and ii. "Properties of Matter"; "Heat." By Dr. H. S. Allen and H. Moore. (Macmillan.) 4s. net.

**Pedagogy.**

"The Scientific Study and Teaching of Languages." By Harold E. Palmer. 336 pp. (Harrap.) 10s. 6d. net.

"The Public School System in relation to the Coming Conflict for National Supremacy." By V. G. Bryant. With a Preface by Lord Rayleigh. (Longmans.) 1s. 6d. net.

**Miscellaneous.**

"Examination Papers for Scholarships and Exhibitions in the Colleges and Universities of Cambridge, December, 1916–March, 1917": Ixxxii.: "Mathematics and Mechanical Sciences," 64 pp.; Ixxxiii.: "Classics," 88 pp.; Ixxxiv.: "Modern Languages and History," 82 pp.; Ixxxv.: "Natural Sciences," 76 pp. (Cambridge University Press.) 1s. 6d. net each.  
"University of Cambridge Higher Local Examination Papers, June, 1917." 164 pp. (Cambridge University Press.) 2s.

"Haggai, Zechariah, and Malachi." Edited, with Notes and Introduction, by W. Emery Barnes. (Cambridge Bible for Schools and Colleges.) Ixxvi+348 pp. (Cambridge University Press.) 2s. 6d. net.  
"Regulations for Responses, 1917–1918." 16 pp. (Clarendon Press.) 6d. net.

"Knock Three Times." By Marion St. John Webb. 320 pp. (Harrap.) 5s. net.

"Thrilling Deeds by British Airmen." By Eric Wood. 320 pp. (Harrap.) 3s. 6d. net.

"West African Folk Tales." By W. H. Barker. 155 pp. (Harrap.) 7s. 6d. net.

"Robin Hood." By Charles Wilson. 160 pp. (Harrap.) 1s. net.

"Persephone." By Katherine Merriman. (Harrap.) Words only, 6d. net; with notes and music for songs, 2s. 6d. net.

"Thomas A. Edison, His Career and Adventures." 220 pp. (Harrap.) 3s. 6d. net.

"The World of States." By C. Delisle Burns. 160 pp. (Headley.) 2s. net.

"Outlines of Political Economy." By Prof. S. J. Chapman. Third edition, revised and enlarged. (Longmans.) 6s. net.

"The Runaway Airship and other Stories." (In Pitman's Shorthand.) 96 pp. (Pitman.) 1s.

"The Girls' School Year Book, 1917." (The Official Book of Reference of the Association of Head Mistresses.) Twelfth year of issue. liv+634 pp. (Year Book Press.) 5s. net.

"The Directory of Women Teachers, 1917." llii+880 pp. (Year Book Press.) 10s. 6d. net.

**CORRESPONDENCE.**

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

**A Defect in Education.**

I READ with great pleasure the letter of Mr. Fred Charles, of the City of London College, in the issue of THE SCHOOL WORLD for January, 1917, dealing with "A Defect in Education," and also the reply to that letter from Mr. M. S. Nateson, of the Hindu Secondary School, Trichinopoly, S. India, published in the June number of your magazine.

I agree with Mr. Nateson that the question raised by Mr. Charles is one "which every schoolmaster should make an honest attempt to answer"; and I venture to give some reasons why, after ten or more years of schooling, many children leave school uninterested, without any desire to know, and without any capacity to learn, the "whys and wherefores" of everything they see—a desire and a capacity they invariably manifested by asking no end of questions before their school-life began.

There is no doubt about it that the children in the infant class of our schools—so far as my eighteen years' experience as a headmaster of an elementary school has enabled me to discover—ask more questions in class, and even out of school, than the grown-ups do; and one reason for it, I think, is that the latitude given to the infants is not given to the grown-ups, because, as Mr. Nateson correctly observes, "many parents and more teachers assume an attitude of terrorism towards young children in trivial matters, so that a feeling of fear is early created in the children's minds, and children gradually begin to shrink from asking questions."

Moreover, I remember, as a boy I was made to feel that it is rudeness for children to be constantly asking their elders questions. The idea still prevails among many parents and teachers that it is so; and children are often checked when they ask questions disconcerting to parents and to teachers who often have not the ability to give suitable or satisfactory answers.

So far as British Guiana is concerned, not only is the children's natural desire to inquire into the "whys and wherefores" of things squelched by parents in their homes, and chilled at school by teachers who are incapable of satisfying their curiosity, but that desire is seriously discouraged by the nature of the curriculum, which gives encouragement to cramming and over-pressure, by the method of teaching adopted, by the style of the annual ex-

aminations, which were decidedly more farcical than even the annual inspections now in vogue; in short, by the whole system of education, which, until three years ago, was out-and-out the obnoxious system known as "payment by results" in its most aggravated form. Truly it can be said that the programme of studies for the elementary schools of British Guiana has been so overcrowded, and the teachers have had to do so much *information-imparting* to meet the demands of exacting examinations which were conducted for the sole purpose of fixing the grants to be paid to each school, from which grant the teachers were to be paid their salaries, that at the present time the children all have mental indigestion, the result of the teachers having been compelled to "dole out with too liberal a hand predigested mental pabulum," causing "the power of assimilation to atrophy."

Mr. Charles says that if the alleged defect in education exists, "then the expenditure on education is not only waste, but worse: it is doing practical harm." That practical harm is being done by the kind of education given in our schools I make bold to assert; but I do not agree that it is the expenditure that is working the harm. I have been studying for some months the books "What Is and What Might Be" and "In Defence of What Might Be," written by Mr. Edmond G. A. Holmes; and it interested me to find him confirming the opinion I have formed that the system of education is responsible for the deadening of the mental powers of the children; or, as Mr. Holmes so beautifully puts it, the blame for the failures of education in general, even more than of elementary education, should not be laid on the teachers, "but on the hostile forces which have been too strong for many of them; on the false assumption of Western philosophy; on the false standards and false ideals of Western civilisation; on various 'old, unhappy, far-off things,' the effects of which are still with us, foremost among these being that deadly system of 'payment by results' which seems to have been devised for the express purpose of arresting growth and strangling life."

At the present time we, in British Guiana, are engaged in compiling a new education code, which is aiming at abolishing totally annual inspections, and at liberating the teachers from the trammels of the cruel system which has been working so much havoc with the mental growth of the children; and whilst we do not expect that the removal of the incubus will bring in the millennium in education, we are looking forward to the time when, by the legitimate exercise of the freedom the code contemplates giving to the teachers, the children will no longer be "gorged with information," but will be able to think for themselves, and use their powers of observation and inquisitive faculties in the manner those powers and faculties are intended by God and Nature to be used.

I am aware that the consummation we so devoutly wish for will be long in coming, for we have before us about *thirty years of error to undo* ere we can start on the new and proper course of educating our youths; and I sincerely hope the defect in education which we in British Guiana, in common with many teachers of the mother country and other units of the Empire, see and experience will be removed to the blessing of the future citizens of the United Kingdom and the Dominions beyond the seas—citizens-in-making whom we, as teachers, have under our care and protection during the years before the period of adolescence is attained.

G. H. A. BUNYAN.

Regent Street Catholic School,  
Georgetown, Demerara,  
British Guiana.

### Board of Education. Regulations for Secondary Schools.

SOME members of the English Association have approached the committee with reference to the regulations for advanced courses in secondary schools lately issued by the Board of Education, and we have reason to believe that many others, especially among those who are teachers, feel regret and alarm at the absence from the regulation of any specific encouragement of the advanced study of English, such as is afforded to that of the classics and modern foreign languages.

Will you allow me, on behalf of the committee, assure them that we are in communication with the Board on this subject, and have reason to hope that our representations will be sympathetically considered?

JOHN BAILEY,  
Vice-Chairman, Executive Committee,  
Imperial College Union,  
S. Kensington, S.W.7.

### Montessori Training College.

I HAVE recently seen in the Press an announcement of a certain new training college where, it is stated, a thorough training for teachers in the Montessori principles and practice of education will be provided; also that the principal *in spe* is studying in America under Dr. Montessori.

I should be greatly obliged to you if, in justice to Dr. Montessori and intending students, you would be good enough to bring to the notice of your readers that *no* student is being trained by Dr. Montessori in America with the view of training teachers in the Montessori method in England, and that the training college in question is *not* recognised by her.

Nobody is more anxious than Dr. Montessori to see a real Montessori training college established in this country, but she has had sad experience in Switzerland and knows what harm can be done by insufficiently trained teachers who come out of unrecognised training schools; they do not bring judgment upon themselves nor upon their trainers alone, *but* upon the Montessori method itself.

C. A. BANG.

(Dr. Maria Montessori's authorised representative  
August 14th, 1917.)

## The School World.

A Monthly Magazine of Educational Work and Progress.

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# The School World

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SIXPENCE.

## EDUCATION AND EMPLOYMENT.

By H. J. CRAWFORD, B.A.

QUESTIONS about the relationships of education and employment have lately been receiving a good deal of attention from educationists and business men, and they are likely to come into still greater prominence in the future. One does not penetrate far into the definition of education without having to consider all sorts of problems about the employment or life-work, the subject of education; and, on the other hand, the most superficial consideration of "tasks of real life" seems to lead one immediately into the region of school and college and the courses of study therein provided. Hence it comes about that the business man's thoughts on education and the educator's thoughts on employment are alike peculiarly valuable and receiving a new attention. An interchange of views is going which promises well for the formation of a new and strong alliance between the two spheres of industry and education.

It may be of interest to consider the relationship between these spheres in some of its aspects, and to note some of its problems and the lines of their possible solution. Broadly speaking, one may say that the relationship of education to employment has been regarded from at least two points of view, both of which have been found inadequate. In the less generous view, education is regarded as a preparation for the performance of some definite life-work, in such a "living," measured in terms of wage and salary, had to be made. In its crudest forms, this kind of education was concerned with the turning out of so many "hands," and its methods and results, based as they were on a narrow conception of utility and inadequacy, and sometimes unworthy, estimate of the meaning of life and personal-

ity, tended to become "bound in shallows and in miseries." There resulted sometimes that kind of mis-education in "facts" which Dickens pilloried in "Hard Times" and elsewhere. The second and more liberal view placed its hope rather upon "a good general education," on the strength of which, it was deemed, the fortunes of the pupil in his after-career might be left to look after themselves. The general education of the pupil was believed to be more important than his training or preparation for any specific sphere. This kind of education, while it got nearer to the true solution, tended to separate the school from the workshop, and did not take sufficient stock of the reasonable demands of employers in asking for business staffs not merely educated on general lines, but educated and trained for definite and specialised tasks.

These two views still hold ground to-day, but they seem to be giving place to another view of education which, if not new, is yet one that is being profoundly affected by the crisis through which the nation is passing. This conception seems to place a new meaning and emphasis at once upon education as utility and education as culture. It is alive to the possibilities of science and scientific method and its applications, and notes how commerce and industry require from their centre to their circumference new ideas and improved and less wasteful methods; but on the other hand it is opposed to education becoming the mere servant of industrialism, no matter how specious the guises or how attractive the rewards that may be offered. It has a high sense of the importance of the individual not only in his hours of work, but also in his hours of leisure, and would seek to offer to each and all some part and lot in the heritage of culture, in addition to a specific training on well-thought-out lines. Moreover, while new thought and care are to be given to the individual in the building up of

his personal and working life, equal thought and care must be extended to him in his training as a member of the community, with the duties and privileges of a citizen.

If this rough diagnosis of current thoughts on education is correct, the question may be asked: By what means are education and employment to be associated so that they may respond easily and harmoniously to each other, and adjust themselves into a kind of constant mutual fruition? The answer seems to be that, in addition to a new and greatly-to-be-desired alliance between employer and employee, there must be a new alliance between the employers and the teachers of the land. Each must know the other's aims and purposes, and out of the interchange of ideas there should arise a more scientific method of dealing with the problem of the transition from the school to the factory, from college classroom and laboratory to the "thinking" and executive departments of our great businesses. Without some new alliance of this kind the employment problem will never be satisfactorily solved, whatever may be done towards its solution in other directions.

For one thing, much more consideration should be given by educationists and teachers to the conditions and prospects of all types of employment and the avenues into them. We have heard and read many discussions as to the need of applying science to industry, and the need is admittedly great. No less important is the need of applying a more scientific method in appointing our employees. Science cannot be applied to industry until we get the right men into industry and in the right way. Our methods of filling posts in most forms of occupation have been the reverse of scientific, and it is certain that even with the best education in our schools and the widest opportunities of commercial development, we shall have serious wastage all along the line unless some method is devised whereby the best-equipped young men and women are used to the best advantage in the world of employment. The energies and brains of a nation are its strongest and most delicate weapon, or rather the forge-house or armoury of all its weapons, and yet but little method has been applied to ensure that the energy and brains find an outlet and an appropriate field of action. Appointments are made in multifarious ways—after examination, by nomination, after casual advertisement, after interview, by recommendation and personal influence, and so on, and something may be said for each and all of these methods, but they are mostly used at haphazard and without any clearly thought-out plan behind them.

Many firms are, it is true, reconsidering and revising their traditional and often rough-and-ready means of filling staff vacancies, and questions about the training and selection of educated employees are being inquired into by employers and associations of employers with results likely to be far-reaching. But the whole question demands a thorough-going investigation from all sides.

In schools and colleges there has never been sufficient information available as to likely careers—the means of entering them and prospects and conditions within them. Owing to want of knowledge and want of guidance the candidate for employment from secondary school, as well as from the university, has often had to accept some position for which he or she has been ill-suited, perhaps never reaching the appropriate sphere or only doing so after years of stagnation with loss of time and money.

The establishment of employment exchanges was, no doubt, an important step in facilitating the exchange between employer and employee, but the exchanges have suffered from their separation from organised education as well as from other weaknesses. They have so far scarcely attempted to provide the employment needs of the highly educated worker, and have probably not been equipped for that delicate task. While the exchanges may have been successful as a piece of administrative machinery set up to effect a definite end, namely, the reduction of unemployment to a minimum, they can scarcely be said to co-ordinate and adjust educational output and employment demand in a scientific way. Whether the exchanges as at present constituted, could ever be a fitting instrument for answering the needs of employers in the matter of skilled assistance is a question open to doubt. In the higher forms of employment the true link of connection lies between the employer and the educational institution. More promise in this direction seems to lie in the new Department of Scientific and Industrial Research. Here is provided a meeting-ground for the employer and the university student who both wish to engage, though for different purposes, in research. At the lower end of the educational ladder school and employment adjustment may perhaps best come about by means of universal juvenile employment committees of local education authorities.

As regards the pupils of secondary schools it is of interest to note that the Headmistresses' Association is considering the formation of an employment agency to meet the needs of former pupils. Here, again, expert knowledge at least from the educational side, would be

e disposal of the agency. Useful work in forming girls' secondary-school staffs and pupils of new openings and employment demands is already being done by the Student's Careers Association of the Central Bureau for the Employment of Women, but there is still much to be accomplished in advising and "placing" our secondary-school pupils, both boys and girls.

Another promising line of development in the scientific treatment of employment is that carried by the appointments boards and committees which are now at work, either in embryo form or as fully constituted bodies, most of our universities. These boards, which were first established at Oxford and Cambridge, are the result of a widely acknowledged feeling that the responsibilities of a college or university to its students do not end with the prize distribution or graduation ceremony, but extend into the sphere of life. The student may reasonably expect some employment guidance and assistance at the hands of the institution where he has received a long and expensive education and training. Not that any educational institution as such is, or should hope to be, a career-providing institution. Institutions which conceive of their educational duties in that way may be rightly suspect both as regards the education provided and the posts obtained for their students. Yet at the same time there is an implied duty for a university to act as sponsor and appointments agent for some, if not all, of its graduates, and the growing number of university appointments boards testifies to the fact that this duty and privilege is being recognised. There have been few more interesting and hopeful forms of academic enterprise than the institution and growth of these bodies. Their work has obviously a bearing and usefulness beyond the particular university served or the particular graduates assisted. The boards are, in fact, doing, or attempting to do, an important national service, because it is in the interests of the nation as a whole that its best-trained brains should be effectively employed. There is little doubt that, for want of proper employment assistance, there has been serious wastage owing to the highly educated and technically trained man and woman being employed on inferior work.

University appointments boards, which are in most cases business representatives, are the more necessary as the field of graduate employment is immensely wider than it was even a generation ago, and as regards the "peaceful penetration" and enrichment of

all forms of commerce and industry, as well as professional and administrative work by the universities and their students. The remarkable contribution of the universities in all forms of war-work (quite apart from the numbers of their graduates and students in the fighting line) is a good augury of what may be done by the universities in the industrial sphere after the war.

We have indeed travelled far from the days when the graduate was confined to the professions for a career. Readers of Carlyle will remember his remark about John Sterling at the close of his Cambridge days:—"Of the three learned professions none offered any likelihood for Sterling." One may not agree with Carlyle's characteristic comments on the difficulties and unsuitabilities of the professions to Sterling and other "young ardent souls" of that time, but the hope put forward by Carlyle that in a better time there would be more than the three traditional professions has long ago been realised. "Professions, 'regimented human pursuits,' how many of honourable and manful might be possible for man!" The universities are realising this, and not only are the courses of study and degrees more various, but the careers and opportunities which open up at the end of them are likewise multiplying, so much so that the organisation of an adequate supply of men and women graduates for the professions proper (especially teaching) may present grave difficulties. Research, industry, and business will attract the educated man and woman in greater numbers. The President of the Board of Education has noted some of the great needs. "We want more physicists, more chemists, more doctors, more trained biologists and botanists, more people expert in scientific agriculture." One might add indefinitely to this list of "wants," which will fall upon the universities with increasing force in the future.

Since the outbreak of the war the activities of university appointments boards have necessarily been restricted, or directed to special channels, but heavy tasks will be laid at their doors when demobilisation comes. Before the war some of the universities had attained a very considerable measure of success in assisting their graduates to obtain employment, and in opening up new lines of work, especially in commerce. The boards start, of course, with the immense advantage of knowing intimately, or at least being in a position to know intimately, the educational and personal record and resources of the students on their registers. They are in close touch with professors and lecturers and the general work of the colleges, and at

the same time seek to respond to and voice the views and wishes of influential employers and associations of employers. They are able to collect much valuable information not available to individual inquirers, and in many ways to act as intermediaries between college and the outside world. The value of this interaction and exchange of thought and ideas between the two spheres of education and business is inestimable. The appointments boards are, quite apart from their specific functions, doing something to remedy that "imperfect correlation" between school and business in this country which Mr. Fisher has deplored.

It would be impossible in this article to speak of the work of the boards connected with individual universities. Much of their work is of a confidential or semi-confidential nature, and the problems to be faced differ widely in different universities. Each university has an employment problem peculiar to itself. The boards at Oxford and Cambridge were the earliest organised, and their success is well known. The Appointments Board for Wales stands on a special footing, as it is a national rather than a university body, serving not only the graduates of the University of Wales, but also the boys and girls as they leave the county schools. The universities of the North of England have of course a special problem in providing higher staffs for the great industrial armies which work at their doors. This is equally the case in Glasgow, where there is an appointments board alive to the opportunities of service in that active centre of commerce and industry. The University of London is also aware of the great possibilities in London of a more systematic co-operation between employers and colleges through the agency of its appointments board. In the case of this board employment is found for women as well as men graduates.

The following extract from a recent speech of the President of the Federation of British Industries is noteworthy as evidencing the view taken by employers as to the future of university appointments boards and their work :—

Then, again—and in this I think the federation could do a great deal—there are our universities, which should be utilised and supported far more than they have been in the past for the furtherance of industry. At those seats of learning our young men receive a training which some may say is merely theoretical, but why should not the scheme of education be extended so as to comprise the practical? There are long vacations, for instance, during which they might be obtaining an insight into the working of a particular industry for which they might have shown an

aptitude, so that when they leave the university appointments board would without difficulty, having cognisance of their ability, be able confidently to commend them for positions under which their services could be utilised to the better advantage of the country and the individual traders than is done at present.

From the educator's point of view the importance and value of university appointments board work have been emphasised by Education Reform Council.

It may be of interest to record that a scheme of co-operation is in process of completion between the appointments boards of universities in the United Kingdom and the Professional and Business Register of the Ministry of Labour to deal with the employment needs of officers and others, connected with various universities, as they are released from military duties.

## AFTER-CARE IN RURAL DISTRICTS

By J. S. FURLEY, M.A.

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**T**HE problem of after-care in small areas and rural districts differs very considerably from that presented in great towns. In the latter the committee and its officers are on the spot; the employment exchange is readily accessible, and it is better adapted for finding posts in town than in country employment. It is worth while considering what form after-care organisation is to take if it is to be really valuable to children in rural and small areas. When we say that the problem is different in the two cases, we must not forget that there is one want common to both large and small areas which it is difficult for machinery or legislation to supply, and that is the personal knowledge of the child and human interest in their welfare, without which any real success is impossible. Nor do we forget that the real persons responsible for a child's welfare are its parents, and that the province of after-care is to supplement and aid the work of the parent, not to displace it.

But assuming, as we may, that there is room for wise co-operation with parents, we want to know how that co-operation may best be given. In the ordinary cases there is not much doubt about the employment of the village lad when he leaves school. He goes to work on a farm. His employment is wholesome, he generally works under men whose influence is for good, his work is varied, he likes it, and he is acquiring a considerable amount of knowledge. It is a mistake to speak of an agricultural labourer as unskilled, for he has both skill and knowledge, and if

continued education that is now assured to him is on the right lines, he will in the future have intelligent skill and knowledge.

So far our country boy has needed little outside care, but even in his case there is room for more. Agriculture does not absorb as men all that it employs as boys, and for some lads farm work is a blind alley; whether it provides their life employment not, all boys of fourteen to eighteen need instant guidance. The well-to-do father sends his son to a boarding-school does not abdicate the right or duty to give him guidance; he avails himself of the experience experts in the training of character to complement what he himself can do. His son's housemaster is his colleague, not his substitute. A country lad needs someone with similar experience who will be the "housemaster" supplementing his parent's guidance. Word in season when he is in danger of getting into foolish ways, a wise warning when he is at the age of puberty, a kindly rearing, and the sense that there is someone who cares whether he turns out well or badly, to whom he can go if he wants help in difficulty—all these are helps for which the richer boy is indebted to others, as well as his parent, and which the poorer needs just much. There is room for one or more persons attached to every school with a touch of the missionary spirit, who will make their business to watch over the development of boys who have had their first training in the village school.

But all boys will not become farm labourers; many are fitted for other employments, and it is not easy for a father to know what employments there are, still less to place his son in them. The employment exchange is not readily accessible and a care committee must take its place. Any jobs, of course, lie at the door. The squire's or the draper's gardener wants a boy-boy, and there is no difficulty in hearing the place, or, even if it involves leaving home, getting the lad housed. But in every school there may be boys of more promise whom it is not difficult to provide. If they are fitted for teachers, the schoolmaster knows what has to be done to get the first rung on the ladder, and our educational system makes the rest easy.

But what of the boy with a mathematical gift who is a good draughtsman, and who in a man would become a skilled mechanic or an engineer? Assuming that an opening can be found for him in works or a shop, he must have home and lodge in their neighbourhood, and that for most village parents would

completely prevent them from giving their son any such chance. It is here that the aid of the "caretaker," or the boy's friend, or whatever name we have for him, comes in, and it is his exertions that can raise the fund to add to the wages of the apprentice's first years a maintenance allowance sufficient for him to board away from home. In some cases there are parish charities that can be used; sometimes the "caretaker" is himself well off and generous; nearly always he can collect among his friends, and people are not unwilling to subscribe to an object in which they really believe. When the money is found, there is a family to be discovered with which the lad may lodge, and if possible someone who will have the same friendly interest in him in his new surroundings that he would have met with in his own village. He cannot be thrown into a town and left there; someone must see that he has guidance.

These are obvious needs, and they can be met best, not by a central committee in the county town of the local education authority, with a travelling officer, analogous to the staff of the great borough, but by having attached to every school a small body of men and women who have the leisure, the judgment, and the devotion to make them of real value to the children in their first start in life. The problem is how to find the right people. Of course, in village schools the proper person for the duty is the village parson, and in many cases he already does the work, and does it admirably; but all country parsons have not the judgment, or even the unselfishness or perseverance, for what is so obviously one of the main chances of usefulness. Where that is the case someone else must come in. One thing is essential, and that is that whoever undertakes to look after children after they have left school should have the means of knowing them and the right of access to them before they have left. The "caretaker" must know the capacities of children, their fitness for this or that occupation, and their family circumstances. He must be able to consult not only parents but also teachers, and to do this he must be someone in the position of manager; or, to put it the other way, the first consideration in the appointment of managers should be this willingness and capacity to look after the best interests of the school with the charge of which they are entrusted.

The provision of managers for schools offers great possibilities, but at present it misses a great opportunity. The theory of their position is too narrow. Their function is administrative, not educational. True it is they are needed for the adequate care of the property,

for a check on unwise and unreasonable, a security against wrongful claims on public money. As a matter of fact, they have to limit their attention to the merest fraction of their duties. Most managers rarely enter their schools, and in many cases they are summoned to a meeting only if it is a case of appointing a teacher. What we want is the presence among them, for town and village schools alike, of one or two people who are prepared to add to the usual functions of a manager a willingness to devote themselves to the welfare of the children.

It is difficult undoubtedly in every parish to find the right man, but it is easier to find a suitable woman; and though hitherto we have only spoken of the boy, we have merely taken the boy as a type, and what applies to him applies equally to the girl. She needs guidance in conduct and help in making a fair start in life. Women are wanted in any case. The change of personnel among existing managers can only be made gradually. Meanwhile, for after-care purposes the managers can co-opt persons who are suitable to form a care committee, and if the work is to be efficient, it is to be hoped that the too common jealousy of the head teacher will not prevent him from being a member too. Already it is he who does most for boys in placing them when they leave school, and his knowledge and co-operation are vital to the success of any scheme. But the duty of managers must be extended; a reform in the whole theory of their position is the key to the position, if we are to have attached to every school responsible persons with a living interest in the future of children. Managers must be capable of becoming, and must become, the care committee.

Besides direction in the choice of employment and care in the development of the character, there are many other influences which wise guides can bring to bear that will foster the qualities which we recognise as the best points in our system of education. Chief of these is the child's love for his school, his pride in it, and the *esprit de corps* which is so powerful a restraint in conduct. In large schools of 600 it is difficult for children to have any affection for their school, but in the schools of 100 to 150 that are common in our smaller towns or larger villages the case is very different. Everyone is familiar with schools where there have been cultivated a tradition and a school character to which a teacher can appeal. Often the parents themselves have been at the same school, and home influence joins in making their children ashamed of anything that lowers its good

name. More often it is the personal character of the head teacher.

But the managers also can do much to encourage the spirit. An old-boys' day ever year at Christmas, when as many of those who have left in the last few years as can be gathered together meet in the schoolroom for a gathering, will help them to realise that the school is something that has influenced them and still makes a claim on them to be just to it by their conduct in life. Again, no child should leave school without hearing something on the aims it should have in view in its coming life said in a way and circumstances that impress it and remain in its memory. The care committee that realises its responsibilities will get together the children who are to leave during the session, and will have someone with a knowledge of the world and sympathy with the young to speak to them for a quarter of an hour. The public-school boy has perpetual high ideals set before him, and he knows after-life how much he has owed to those who spoke to him; the poorer boy rarely has such opportunities, and it is one of the aids that managers and care committees may easily provide for their own schools. Legislation and the Board of Education can do much, but it is mainly machinery that they can provide. Valuable as the machinery is, it is the spirit that quickeneth, and small schools at scattered population must always depend more on the spirit than on the machine. Can we provide the spirit? There has been not too much of it in the past. After the war, it is to be hoped, there will be more set free.

#### THE PLACE OF MEMORY IN THE TEACHING OF MATHEMATICS.

By R. NETTELL, M.A.  
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THE part that memory plays in a mathematical education is usually either entirely overlooked or deliberately ignored. For many years past it has been considered the proper thing amongst teachers of mathematics to appeal only to the understanding of the pupils, and to discourage any reliance on memory. Any frank appeal to the use of the memory has been looked upon as pure cramping the teacher as non-mathematical and incompetent. The general overhauling and revision of the methods of teaching mathematics have, naturally enough, been accompanied by a strong protest against the method in vogue in some schools where the elementary work had been in the hands of men who themselves had had very little, if any, experience in

mathematical studies, and whose knowledge of the subject was confined to what they had picked up in struggling with the difficulties of their pupils.

Mathematicians are right in objecting to reliance on memory when it is used blindly, without a proper understanding of the reasoning involved in the arguments or facts that are memorised. Such use of the memory will not carry us far. Hence the cry for reasoning, not memorising. What mathematicians have often failed to recognise is that reasoning is the exercise of both memory and understanding. Truly, to understand is to have a conscious realisation that each step of a line of argument is in agreement with some previous experience. If to any step there does not correspond a similar experience, then the argument is not understood, although our memory may retain it and we may ultimately accept it as established. But in order that there should be a conscious agreement with a former experience, an experience must have been stored in the mind and recalled when needed. In other words, the power to understand depends primarily on the power to recall impressions—that is, it depends on the memory.

It is unfortunately true that our ideas on methods of teaching tend to be influenced by our experiences with brilliant pupils more than with those of ordinary ability. We find that with our best boys certain methods are followed by success, and if we find them failing when applied to the average boy, we are disposed to put the blame on the boy and not on the method. In teaching a class of high mathematical ability we insist on a proper understanding of each piece of work as we proceed. We argue that, if it is really understood, that is all that matters. We only assume that, if it is understood, can always be reproduced when needed, for, though it may not be remembered, yet "it can always be worried out again," since the reasoning has once been fully grasped. Nor, as a general rule, are we wrong in our forecast of the brilliant class; for this very striving to follow and to understand is the best possible way of obtaining strong, vivid first impressions, and the power of retaining and recalling depends largely on the strength of these impressions.

Success has followed our method, and we feel justified in thinking it is due to that method. *Post hoc, ergo propter hoc* we argue, and forthwith we conclude that our method is the one sound plan for all mathematical teaching. forgetting that we are thus generalising from a very special case, from a very small minority of our schoolboys—the brilliant class. We all know that boys of inferior mathematical

ability often fail to remember anything whatever of what they have apparently understood only a few days before. To what is their failure due, and why is it that the "understanding" method breaks down so utterly in their case, and yet seems to succeed with cleverer boys? The cause lies in the difference in the quality of the memory in the two cases. In one case the memory for things mathematical is naturally good, or has been well developed; in the other it is naturally poor or untrained. What is needed in the latter case is more attention to a proper training of the memory in things mathematical. No one wants boys to learn every proof by rote, and to store their brains with strings of words which, whilst standing for mathematical reasoning, may yet be quite meaningless to them. But we do want them not only to grasp the true meaning of mathematical ideas, but to be capable of recalling them. We want them to develop the power of so visualising mathematical facts that these images become fixed in their memory.

It is just because there is this confusion between memorising words and memorising ideas and images that the proper training of the memory has received such scant attention from many mathematical teachers. How can we best train and make full use of the memory in the teaching of mathematics? Here, as elsewhere, it is best done by constant reiteration and thinking about the facts, demonstrations, proofs, and so forth, which we wish to remember; and we shall think most about them when we use them and when we try to recall them. We must realise that it is not enough merely to follow a piece of mathematical reasoning. To get the full value from it, it must be assimilated—that is to say, it must be absorbed and find a place of its own in the train of our knowledge. This, it should be noted, cannot be done by any gliding over the surface of things; it requires genuine concentration and thought. It may not be possible to reproduce the reasoning at will at a later period; but, if it has been really assimilated, we shall always be able to recognise it as an old familiar landmark whenever we meet it again. In other words, it will have left a lasting effect. On this subject Prof. Adams says: "Information acquired without being assimilated is worse than useless, since it is not only incapable of application, but takes up the room of better material."

This brings us to the cause of the failure of so much of the class teaching of the present time. We give a proof or a demonstration and imagine we have done well if we have led our class to understand the line of argument. But, unfortunately, we frequently give our

pupils so much aid in recalling past impressions, and in recognising the facts brought before them, that the class as a whole makes very little, if any, unassisted effort to recollect and compare. By our very anxiety to make our reasoning clear and to remove all difficulties, we are robbing our work of a part that should be of its very essence, viz. practice in calling up at will past impressions and in conscious recognition of those impressions. Moreover, by so frequently omitting to demand a reproduction of our demonstrations at a later period, we are leaving our work unfinished; for, even if we are inclined to feel that to understand a proof thoroughly is all that one should require of a boy, yet experience compels us to recognise that the only way to discover if he has really understood what he has been shown is by making him reproduce it in his own words, orally or on paper. Now it is just the average boy who, when he fails to understand, does not realise that he has so failed, and not until he has attempted to go through the work without any assistance does he become conscious of the break in the chain of reasoning. This effort to recall, or attempt to recollect, is a powerful factor in education. Impressions may be vivid, the power of retention may be great, but the ability to recall at will weakens if we make no effort to exercise it.

There is much to be said for the argument that some portions of mathematics ought to be committed to memory in much the same way as a page of Latin grammar. Especially is this true of the elementary work, where, through fear of loss of interest and freshness, it is most frequently neglected. Rules of sign and meanings of symbols—that is to say, the shorthand of mathematics—come under this heading. Classes ought to be drilled in the meaning and practical application of these rules until to use them correctly becomes a habit easier to follow than to break, and they are so familiar as to be used mechanically.

The peculiar power which we call mathematical ability is the power to look forward and backward, to sift a mass of *implied* data, and to seize only those essential for the solution of the problem, whilst thrusting the others back into subconscious mind, once they have been examined and rejected. What does this mean but that the basis of mathematical ability is the power to retain and to recall at will a host of previous experiences and impressions? The greater the ease with which they are retained and recalled, the more rapid becomes the progress and the more trustworthy the reasoning.

If this argument be correct, then by making proper use of the memory and increasing its efficiency by such use, it should be possible to

raise the general standard of mathematical work to a higher level.

It is well to bear in mind that before there can be any real accuracy and ease of work in the practical application of mathematics there must be some point in the line of progress at which the knowledge previously gained has become so memorised and so familiar in its use as to be relegated to that set of operations which are performed mechanically or subconsciously. Beyond this point there is no such familiarity, and greater effort is required to recall and to recognise facts necessary for full and perfect understanding of the work in hand. The better developed the memory, the farther forward this point will be carried thereby increasing the skill of the mathematician and making his work more trustworthy and more original. Prof. Whitehead has crystallised this idea in his "Introduction to Mathematics," where he says:—"Civilisation advances by extending the number of important operations which we can perform without thinking about them."

The writer is far from advocating a system in which reasoning takes a second place, but rather that it should be assisted by a full use of the memory; and he would submit that little headway will be made in our method of teaching mathematics until we realise that memory, far from being the enemy of training in logical reasoning, is, on the contrary, the one factor absolutely necessary to its very existence.

#### THE GRADUATE AND THE TRAINING COLLEGE.

By F. SMITH, M.A., B.Sc.

THE recent adoption, by the majority of our universities and university colleges, of a four-year course for the training of teachers has produced marked changes in important directions. It has emphasised the value of professional training, for the whole of the valuable fourth year is now given over to professional studies; it has brought the dualism of the three-year system to an end, a dualism which often presented itself to the student in "a university degree *versus* a teacher's certificate," resulting in a minimising of the latter for the sake of the former; it has added to the health and to the enjoyment of the student, for the strain is lessened, and intending teachers are enabled to mix more freely with students preparing for other professions.

These are obvious external improvements. There is another way of considering the matter, a way which is more vital, more difficult to estimate, more easily ignored. It is

the consideration of the student's view of his professional training, his attitude to the work, his interest, zeal, convictions. More specially is it the consideration of the student as a graduate, a fourth-year man, and all the implications of that title. It comes in the end, of course, to a question of what is the real system of training : at present we are in the experimental stage, and my object here is merely to record some of the observations I have made as to the student's view of the four-year system, and the new conditions that have arisen.

Graduation may be described as a psychological coming of age. It marks the end of an important period in the student's life, and the realisation of long-cherished hopes, the cognition of many years of study. These facts mean a good deal in our understanding of the graduate consciousness, the matured mental outlook. Freed from the pressure of final examinations, gratified by the possession of a degree, equipped with freshly acquired and recognised knowledge, trained in methods of study which he has found by experience to be the best for him, desirous of gaining a wider and more comprehensive viewpoint of life and its varied aspects than he has found possible in the little leisure of the past three years, increasingly able to reflect, to pass reasoned judgments, to discuss critically the questions that press on every one, determined also to keep in touch with and even to extend his knowledge of the subjects he has made his own, the graduate comes up for a fourth year with keen anticipations of the many things it may offer.

This picture is not overdrawn. It is possibly more true of women than men students, but my experience is that it is true, in different degrees, of the majority of both sexes. There are other characteristics, of course. The training college official of a certain temperament may be painfully conscious of the immaturity, the narrowness, the ignorance of these same students. I am making the obvious point that the students have a different outlook from his, with the important addition that they believe their own to be better. We all do the same, for the simple reason that we understand our own motives, our desires, our aspirations better than any other person can do, and the confidence that comes of graduation brings this factor into its first full strength. The training college must realise, therefore, that it is dealing with students unconscious of their needs, with deliberately formulated points of view, with firmly established habits of work. Their interests, tastes, standards of value are already largely

decided, and though these may be modified, they will not be radically changed.

The social factors of college life serve to strengthen and intensify the new outlook. The fourth-year student holds a privileged place. A reputation—intellectual, athletic, social—has been made and carries its possessor into various offices. Of course, undergraduates may share these responsible posts, but the majority go to the graduates. And inasmuch as the training department has now the largest number of post-graduate students in the college, an unusually high percentage of its members hold some position of trust and honour, and are responsible for the working of the multiform organisations of student life.

Our problem is to consider how the training course meets this new outlook, how far it satisfies the new demands. It is dangerous to generalise, for procedure varies from place to place, and it would be easy to give a wrong impression. But it is true to say that the curriculum comprises so large a number and so great a variety of topics as to distract and dissipate the student's energy. It is planned more or less on the lines laid down by the Board of Education in its examination for the elementary-school teacher's certificate, and in some wonderful and inexplicable manner the teacher in an elementary school is expected to possess more native capacity, to be more richly endowed, than any other person in the whole world. He must show proficiency in the teaching of every subject that appears on the school time-table, he must reach a satisfactory standard in elocution, in drawing, in handwork of various kinds, in music, in physical drill, and he must pass a written examination in hygiene, in the theory of education, in the methods and principles of teaching, and in general questions of school organisation. Such a wide programme necessitates a hurried and inadequate treatment, inadequate alike to teacher and taught. Now it is a well-known fact that the majority of the graduate students will not enter the elementary service under present conditions. They are openly intending to become secondary-school teachers, to teach only a few subjects, yet this fact is not adequately recognised, and they are all compelled to dabble in the same miscellaneous programme. I know that exemptions may be secured from one or two classes in which the student is found to have no natural gift, but in practice these exemptions are few, and they do not meet the case. For curriculum and syllabus are planned as a whole, and the time allotted to each subject is determined by the whole. Hence the elementary nature of the instruc-

tion. Think of the graduate who comes from his final classes to the curriculum I have outlined! It means that he must spend something like three times as large a number of hours in set classes as the preceding year, some subjects of which he is beginning for the first time. His hours are fully taken up, but his mind may not be assailed. He spends his days in a distracting rush from subject to subject, some of which are too simple to attract his intelligence, whilst others are so obviously useless to the future he has mapped out that they merely bore him. His methods grow more and more mechanical, his dreams fade, his dissatisfaction groans aloud. He cannot do the things he would; he must do the things he would not.

I can give the evidence of the students themselves, for I recently set a paper of some eighteen questions to the members of a fourth-year class nearing the end of their course. There was a clear understanding that the answers would be treated in confidence, and they had every appearance of complete frankness. I was fairly well acquainted with the general opinion of the students before I saw these papers, but they have convinced me that I was still suffering from various illusions which no other method could have removed so quickly and so effectively. With some of the points we have no concern here, for they are due to personal grievances and misunderstandings, and therefore it would serve no useful purpose to repeat the questions and answers in detail. They cover a wide field, and an opportunity was also given for free expression of opinion outside the set questions. The answers are given with a decisiveness and a conviction which testify to a very intense and real feeling, a proof of the change which marks off the graduate from the younger student.

The most general complaint is that the time-table is too full, and the instruction too elementary, too uninspiring, too general. This is most forcibly expressed by the ablest and best students: they want higher mental flights, fewer lectures, and greater freedom of choice—not with the aim of avoiding work, but in order that work may suffer less from interruptions, be more suited to their special interests, better related to their felt needs. The point may be illustrated by a few quotations from different students: "It becomes known during our first three years whether we can work or not; there is no need to keep up a strict discipline during the fourth, and compel our attendance at incessant lectures." "There is something rather childish about the way we are expected to

take knowledge pills. More opportunity for individual work would meet with better results—some lectures merely teach us to waste our time or else to work with half brain." "There are tremendous opportunities for fourth-year students. One is just beginning to feel interested in study of all sorts, and plenty of scope should be given, as well as plenty of free time." "Why is attendance at lectures *required* from students who are mostly graduates, and capable of judging whether they would benefit from them?"

It might be objected that these are youthful opinions, as though that were a reason for ignoring them. I can only repeat that they are written by the best students, and that so long as they exist they must be faced. They mark the mental advance I have described. The attitude to formal lectures has changed. What was once followed attentively is now ignored. Unless the lecture can stimulate and inspire, it is regarded as a stupid substitute for a text-book. Almost unanimously these students voted for a decrease in lectures and increased opportunities for criticism and discussion. The material they can gather themselves, but they want to measure their views against others, to test generalisation, to bring *their* contributions to debate. Moreover, a full time-table often means little real work. One student writes: "It is easiness enough with so many classes to keep up a respectable front on very little personal study." The words show that the danger is a very real one.

There is no unanimity regarding the "useless" subjects. Nearly every class is useless to one or more students, and the diversity of opinion is further proof of the futility of stereotyped time-table. An undergraduate can exercise some choice in the classes he attends, but in the fourth year, when individual differences are greater than ever, we blindly assume that our students are all of one mould and we prescribe almost uniform treatment. It is a case for plain speaking. It is stupid enough that all elementary-school teachers should be expected to acquire skill in the same half-dozen pursuits, and a good deal of harm has resulted from the mediocre level of attainments, but when the same things are forced on unwilling and openly contemptuous graduates, who know that many of them are of no use to them, and who may have little native aptitude, then the stupidity has become a crime. The time thus wasted in a valuable year is the least part of the evil done: the real evil is that such enforced instruction begets lassitude, irritation, mental inertia. It encourages mediocrity and indif-

rence, tendencies which have a fatal habit of spreading to other associated subjects. The students feel all this. One of them writes, in words far stronger than any I have used, about the hypocrisy and immorality of it, and others also condemn it. They openly confess that they "slack" deliberately, a fact that needs no elaboration. The springs of effort are not loosed by distasteful work that cannot in any way claim to be useful, and so the students float on passively, their mental energy unused, their powers wasted.

It is not surprising, therefore, to find that the amount of reading done over and above the specified text-books is miserably small, and that no educational periodicals are read with regularity. Time and interest are lacking. The course as a whole is deemed less interesting than in previous years, though in some cases a keen interest is developed in special directions. It is too distracting in its diversity, too irritating in its incessant petty demands, too mechanical in its uniformity. The chief value of the year, in the opinion of the students, comes from their fuller acquaintance with their fellow-students and with their teachers, and from their greater responsibilities in college activities. Some, not all, admit that their views on education and teaching have been considerably altered; a few believe that their future work in school will be done more intelligently because of the course of training. All agree that training has some value.

I ought to add that I do not subscribe to the view that a student is the only efficient judge of what is valuable for him, though the emphasis placed on his opinions in preceding paragraphs may seem to have been leading to that conclusion. There are other demands to be met than his interests and preferences. But I do plead for a recognition of those interests and preferences. I am constantly reminding my students of the psychological dictum that to promote mental effort, to sustain attention, to feed interest, there must be an appeal to the child's native interests, a recognition and use of the child's motives, an attempt to convince him that the work in hand is worth while. It is a principle that is taught in every training college, and my plea is that it may also be applied there. The graduate student comes to us after much manipulation: his interests are developed, his purposes have grown conscious, his scale of values is formulated. It is a profitless thing to kick against the pricks. If the supreme gift of the teacher is a rich personality, let us respect it. We must, in short, realise that there is a psychology of student life as well as of school life.

## THE TEACHING OF CIVICS.

By E. M. WHITE.

**A**T no time in the history of education has the need for teaching civics been so great as at present, and never has the need been so recognised, as is witnessed by the many schemes of educational reconstruction, none of which fail to demand a training for citizenship. The nation wants citizens who are aware of their responsibilities and capable of assuming them; the production of such citizens is the duty of education and the chief aim of civics teaching. To be successful, such teaching must fulfil the threefold purpose of arousing interest in the subject-matter, which extends far more widely than is generally realised, of giving a knowledge of the past and its growth into the present, and of erecting an ideal for the future and pointing the road towards it.

In order to achieve these results the scope of civics must be widened beyond the teaching of the uses of the various departments of State and the data of local government. The usual answer to the query, What is civics? is that it tells about the way we are governed. But government is only a minor section, and the subject is closely connected with everyday life and passing events as well as with the long vista of the past. It is a review of the Empire as well as the village and town; for the spirit of citizenship should permeate all spheres of life, thought, and action.

There is a lack of connecting links between the multitudinous subjects of the time-table, and civics forms such a link between history and geography, between the past and the present, and between school and life. The formula of Prof. Geddes, "Place, work, folk," forms a basis on which each teacher can build his syllabus. But it must always be remembered that facts about buildings, institutions, or laws, however interesting, are not more than the body of civics; the spirit is the sense of citizenship and the desire to serve and help. And for an inspirational subject mere memory work and irksome tasks should never be insisted upon. It is essential that the pupils should *wish* to hear the lessons, and that their attitude towards the teacher should be one of trust and regard. On the relationship between teacher and taught depends much of the estimate made by the latter of any subject.

Civics is eminently a practical subject in the sense that bookwork alone is quite inadequate for its study, nor is mere knowledge sufficient as a result. Hence many methods of teaching this "little-noticed bud

on the vast, ever-spreading tree of knowledge" (as Prof. Geddes calls it) can be devised, and the following are suggested as having been found efficacious after some years' teaching of the subject to pupils of from fifteen to seventeen years of age.

All historical events and institutions should be connected with present-day life. If, when dealing with the Judiciary, a visit to an old prison is made, opportunity must be taken to compare the modern and changed attitude towards crime as exemplified in the establishment of the Little Commonwealth and the Borstal system. When dealing with national affairs connected with Parliament, the Army or Navy, the Empire, etc., it is well to notice all current events in which a citizen should be interested—the recent Imperial Conferences, the proposed League of Nations to enforce peace, self-government for India, are all examples taken at random. If a board on which newspaper cuttings can be fixed is kept in the classroom, pupils themselves will also often bring news. Such events must be explained in as simple and impartial a manner as possible. Even party politics may be touched upon in an unprejudiced manner in a case such as Home Rule for Ireland; to take an historical view of the question often obviates difficulties of partisanship.

Very important is it that the history of their native towns, including its present activities, should be known by all the young citizens, and here the locality itself affords an abundance of illustrations. If it is feasible the best plan of completing the teaching of this history and of arousing civic pride is to arrange an exhibition of the past and present of the town. The pupils themselves should take the greater share in the preparation in the way of collecting objects, drawing diagrams, writing charts, and making illustrations.<sup>1</sup>

Visits should be made to the local museum, and all objects connected with the district can be examined, and some of them sketched. All places of historic or industrial interest should also be visited, and, if it is impossible for the whole class to go, two or three pupils can be deputed to see certain places, such as old churches or castles, picture galleries, factories, printing works, etc., to which young people can gain entrance. Their observations can then be given to the class, and all can take a turn at exploring and explaining.

Local government should be treated very personally, so to speak, with constant reference to people, places, and doings familiar to the pupils, and a good deal of informa-

tion can be hunted up by themselves either by questioning their elders, or consulting directories, etc. Various topical questions can be set for them to answer, such as: Who decides whether you may leave school before sixteen? How much is your water rate? Where do you apply for exemption from vaccination? What is the name of your ward? In what district council is such a village situated? Simple questions they are, but they create an interest in the pupils' own locality, and the answers, obtained by their own searching, will yield more than solitary facts.

Wherever possible, charts should be used to illustrate chronology, proportion, etc., and excellent examples can be found in M. Curtis's "Problem of the Commonwealth"; in considering the British Empire they are most valuable for showing relative population. One or two pupils can always enlarge the charts found in books, and the rest can copy them. Chronological charts, whether comparing centuries in the development of the Empire, or detailing events in the history of a village, are most important and effective in impressing the sequence of history.

The whole subject is as yet in the experimental stage, but the danger of confining merely to governmental activities must be guarded against, and the course must always be left open, with a sense of progress and vista. Therefore the wider the syllabus, the better it will be and the more likely to capture the imagination and to arouse interest in many varieties of mind. To quote Prof. Geddes again: "[It must be] contemporary as well as historic. It must be geographic and economic, anthropological and historic, demographic and eugenic, and so on; and above all it aims at the reunion of all these studies in terms of social science." Of course syllabuses must be adapted to the age of the pupils, to the environment, and to the teacher's preferences. The following is a list of sections from which selections can be made for a two years' course.<sup>2</sup> The teacher of civics should, however, have knowledge of and interest in, all the sections, and older pupils should obtain some idea of the extent of the subject.

#### CIVICS SYLLABUS.

(i) INTRODUCTION.—Scope and aim of civics—Geddes' formula; ties of citizenship; typical citizens of all ages; definition of citizen.

<sup>1</sup> Such an exhibition has been held, and is described in a pamphlet entitled "An Experiment in Practical Civics." (Watts.) <sup>2d.</sup>

<sup>2</sup> It is obvious that Nos. viii. and parts of Nos. i., ii., vii., and ix. are unsuitable for younger pupils. In connection with Nos. iii., iv., and v. this should be arranged.

- (ii) THE SOCIAL UNIT AND GROUPS.—The family; guilds; other fellowships.
- (iii) THE ENGLISH VILLAGE, especially in the particular county of the school.
- (iv) TOWNS AND CITIES, past, present, and future.
- (v) HISTORY OF THE TOWN in which the school is situated; museums, exhibitions, and surveys.
- (vi) ENGLISH LOCAL GOVERNMENT, with special reference to the pupils' locality.
- (vii) THE NATION.—Ancient States; growth of the English nation; the nation's industry; Parliament and Government; Army, Navy, Civil Service; the Judiciary.
- (viii) MODERN TENDENCIES AND RECONSTRUCTION.—Politics; education; sociological factors—eugenics, remedial agencies, etc.; the English spirit—in art, literature, science, etc.
- (ix) THE EMPIRE.—Its growth; outlook for the future.

At the conclusion of a course of civics lessons a threefold result will have evolved in the young pupils' thoughts and feelings—civic pride, a sense of responsibility, and an aspiration. The feeling of pride will be concerned with the past, and will be aroused at the contemplation of the achievements of our ancestors in the town, and in the wider spheres of country and Empire, and at the history of civic institutions. The exhibition before mentioned is a forcible means of kindling such a pride. To the present will be directed the idea of responsibility, and in its desire to help in its turn the young soul will be led to say: How can I serve and carry on the tradition?<sup>3</sup> And the aspiration looks to the future, and concerns itself with further progress and with the dreams to be turned to reality by the continuance and improvement of what is.

#### SCIENCE TEACHING IN SECONDARY SCHOOLS.

By NOWELL C. SMITH, M.A.  
Headmaster of Sherborne School.

THE "Report on Science Teaching in Secondary Schools" presented to, and published by, the British Association<sup>1</sup> in July is a very valuable pamphlet of eighty-five pages which it is to be hoped will be carefully studied by all whom it concerns—and that is really by all secondary-school teachers, headmasters and headmistresses, and education authorities. The committee was a strong one, consisting almost entirely of teachers and ex-teachers in

secondary (including the so-called public) schools, under the chairmanship of Prof. R. A. Gregory. The report proper of some twenty-five pages is judicious, and on the whole gives fair recognition to the increased attention which has been paid to the claims of natural science in the public-school curriculum in recent years—for in the State-aided schools, as is well known, it has long occupied a prominent place. The most important features of the report are: (1) the insistence upon the need for adapting the science teaching to the psychology of the pupils, *i.e.* of appealing mainly to the "wonder motive" in the preparatory-school stage, to the "utility motive" in the middle stage or the bulk of secondary-school pupils, to the "systematising" or "theoretic" motive in the abler adolescent pupils; (2) the due balance, rather than compromise, held between the descriptive, historical, humanistic treatment of the subject on one hand, and the experimental, disciplinary, systematic treatment on the other; (3) the attempt to secure, what is at present very much to seek in our examination system, that co-operation of teachers and examiners and correlation of examinations with teaching methods and syllabuses which can alone deliver the schools from intellectual bondage.

With regard to the first point it can scarcely be doubted that the failure of science teaching to get hold of the average boy, at any rate to the extent which one would expect from the inexhaustible interest of the subject, is principally due to over-insistence upon logical completeness and experimental rigour. Analogous mistakes have vitiated our treatment of other subjects, and they are mainly due to the common failure of adult teachers to "think themselves back" into childhood and adolescence—in other words, to lack of imaginative sympathy. In spite of almost universal lip-service to the truth about education, we adults are for ever slipping into those grooves which love of power and love of ease combine to make so fatally attractive; and we cozen our consciences with platitudes about "superficiality" and "discipline" as we try to impose ourselves upon our pupils instead of giving ourselves for them. "It must be remembered," says the report—and let us hope it will be remembered—"that teaching which is not founded upon the pupil's direct interest in natural phenomena for their own sake cannot stimulate genuine scientific activity, and that no 'scientific training' can be effective which kills instead of fostering the root from which all scientific activity has grown."

The same considerations apply to the second point, the due balance between descriptive and experimental methods. This subject is very

<sup>1</sup> Some answers to the question may be found in a booklet by F. J. Gould entitled "Love and Service of Country," obtainable at the offices of the Association, Burlington House, London, W.1. Price 1s. net.

sensibly treated in Section V. of the report, though the language is not always perfectly lucid. Nothing, however, could be better than the following summary (pp. 19-20) :

The observational work by which the study of science should begin opens the eyes of the pupils and may be used to train them in the correct expression of thought and of accurate description. The practical measurements in the classroom have for their object the fixing of ideas met with in the mathematical teaching. Every pupil should undergo a course of training in experimental scientific inquiry as a part of his general education up to a certain stage, after which the laboratory work may become specialised and be used to supply facts which may be a basis for more advanced work or to prepare pupils for scientific or industrial careers.

At suitable stages, when pupils are capable of taking intelligent interest in the knowledge presented, there should be courses of descriptive lessons and reading broad enough to appeal to all minds and to give a general view of natural facts and principles not limited to the range of any laboratory course or detailed lecture instruction, and differing from them by being extensive instead of intensive.

Finally, the aims of the teaching of science may be stated to be :—(1) To train the powers of accurate observation of natural facts and phenomena and of clear description of what is observed; (2) to impart a knowledge of the method of experimental inquiry which distinguishes modern science from the philosophy of earlier times, and by which advance is secured; (3) to provide a broad basis of fact as to man's environment and his relation to it; (4) to give an acquaintance with scientific words and ideas now common in progressive life and thought.

As to the third point, the relation of teaching to examination, the report reinforces the views of almost all who combine serious thought on the subject with actual school experience. There was a time, no doubt, when the institution of external examinations gave a needed stimulus to the schools. But for a long time past the examination system has been one of the chief hindrances to educational progress. And although the volume of discontent with it has swollen to such an extent in recent years that everyone now is agreed that "something must be done," and the Board of Education is making praiseworthy efforts to do that something, the vested interests of examining bodies have become so great, the prejudices and particularism of individuals on university and professional boards are so obstinate, and the *incuria* of teachers with regard to the broad principles of their profession is so inveterate, that the prospect of a real deliverance for the schools is not very bright. However, we must "peg away"; and it is a great encouragement to find this committee repudiating the reactionary idea of

making a "pass" in science necessary for school certificate. "It would be unwise to make passing in science compulsory;<sup>2</sup> the aim should rather be to remove compulsion in other subjects." The professed object of a university matriculation and professional preliminary examinations is to secure that intending students in their respective institutions should have had a satisfactory general education suitable for adolescents. By themselves these examinations do not, and cannot, secure this; but it could be secured, far more simply, by a system of school records, inspection, and of examination, all combined while teachers and pupils alike would be free to pursue knowledge and beauty for their own sakes.

The report does not explicitly distinguish between competitive and qualifying examinations. This is a pity, as the two are constant confounded in discussions of the examination system, whereas they are fundamentally different. Competitive examinations are perhaps a necessary evil; but qualifying examinations, if rationally applied, need be no evil at all.

The chief criticism to which the report lies open is on the score of expense. The committee's proposals for oral and laboratory tests undoubtedly involve additional expenditure, nor does it face with sufficient explicitness the question of the expensiveness of science teaching as a whole. This expensiveness is perhaps often exaggerated in controversy, but it is none the less a real problem. It would have been helpful if a section had been exclusively devoted to this subject.

The report itself is, as I have said, a very valuable document; but pp. 27-80 of the pamphlet contain matter of still greater value and interest in seven "typical science courses," explained in detail by their expert authors. The titles of these will indicate their interest to science teachers in various types of school :—  
 (i) Science for all in a public school, by Mr. Vassall, of Harrow; (ii) Science in a public school, by Mr. Sanderson, headmaster of Oundle School, well known for its work in applied science; (iii) Scheme of science work for an urban secondary school for boys, by Prof. Nunn, formerly chief science and mathematics master in the William Ellis School; (iv) Science scheme of a rural secondary school, by Mr. Aldridge, headmaster of Shepton Mallet Grammar School, where Latin finds no place in the general curriculum, at any rate up to the age of fifteen; (v) Science

<sup>2</sup> For "compulsory" read "necessary for obtaining a certificate." You can lead a horse to the water, but can't make him drink.

urse for a public secondary school for girls, by Miss Drummond and Miss Stern, the one formerly, the other now science mistress in the North London Collegiate School; (vi) Ditto, by Miss Clarke, senior science mistress in James Allen's Girls' School, Dulwich; (vii) suggestions for a course of practical food studies, by Prof. Armstrong. The last-named is by far the longest. It is full of detail, lucid, stimulating. It is delightful to be able to praise without reservation a positive contribution to science teaching from one to whom science teaching already owes so much, but whose controversial intolerance has procured the opponents of his subject with so much ammunition. Prof. Armstrong's object in these "suggestions" is "to aid teachers, specially in girls' schools, who desire to develop a logical, comprehensive laboratory course of instruction based upon food materials." "My desire has been," he adds, "to see a scheme of instruction gradually introduced into girls' education which will make them scientific observers and thinkers in relation to all home matters." "Domestic science" is, of course, a subject of great importance in the education of girls, though the committee evidently thinks (p. 19) that what passes under that name is apt to have little scientific value. It might, indeed, have been rather more explicit on the subject. The sentence, "If domesticity is dominant, the work cannot be accepted as an effective substitute for a proper science course," suffers from the use of the word "domesticity" in an apparently new, but undefined, sense. However this may be, Prof. Armstrong's course of practical food studies is every bit as suitable for boys as for girls—especially as the male sex takes a more practical interest in food than the female, although the exigencies of our social order impose upon the latter the often uncongenial task of cooking it.

It is impossible to deal in any detail with the even science schemes named above. What strikes one on the whole is that after about forty years of effort the main principles of method have become fairly well acknowledged among teachers, and, at any rate in theory, an equilibrium has been reached between the two main purposes of science teaching, viz. to open our eyes to the world in which we live and to train us in habits of intellectual truthfulness. These were, as a matter of fact, the objects of the committee of 1866, just as they were of Faraday and Tyndall in the famous lectures of 1854. They must be the objects of all broad-minded and well-educated thinkers. But in the actual application of principles to school teaching, with all the complexity of time-

tables, removes, external examinations, etc., there is constant danger of over-emphasising one part of the work and neglecting another; and it is highly necessary that teachers should be frequently brought back to consider the fundamental principles of their work. For a good many years the "heuristic" principle, which was invoked with fullest justification to rescue the science teaching of boys from the depressing effects of mere lectures and demonstration, has itself become something of a tyrant, and pupils have been set to "discover" facts, for the mere sake of the process itself, with too little regard to their intrinsic interest or their bearing upon other facts of interest to the pupils. At the present moment many people have become so acutely conscious of this that there is perhaps a danger of the pendulum swinging too far back. The very word "heuristic" has been described as "the curse of science teaching in schools." The writers, however, of the schemes of work included in this report, and particularly Mr. Vassall and Mr. Sanderson, who are both fully aware of the importance of a broad and human treatment of the subject, lend no countenance to any one-sided method in either direction. Mr. Sanderson, while insisting on the need for appealing to the "romance of science," is equally insistent on the fact that "boys like to do things for themselves, rather than watch other people doing them"; and Mr. Vassall, among other valuable maxims, lays down that we must "exclude rigorously any work, practical or otherwise, which is not worth doing for itself."

Perhaps the most novel suggestion in Mr. Sanderson's paper is that workshops should be made self-supporting. An objection to the suggestion is that it seems to imply a very considerable scale of operations if there is to be a sufficient variety of work for educational purposes. But this and other points in these very suggestive papers will no doubt be widely and thoroughly discussed. It must suffice here to have indicated some of the points of interest, and to repeat the hope that all who are interested in science teaching will give the whole pamphlet their immediate and earnest attention.

*Electrical Laboratory Course for Junior Students.* By Dr. Magnus Maclean. 120 pp. (Blackie.) 2s. net.—This is a revised edition of an earlier book prepared by Messrs. Archibald and Rankin. More than seventy experiments are described; they are well selected, and so clearly set forth that students will be able to carry them out intelligently without much aid from a teacher. The later experiments include the testing for faults in cables, the photometry of the arc lamp, the calibration of commercial measuring instruments, and the testing of dynamos and motors.

## PERSONAL PARAGRAPHS.

THE Rev. W. Done Bushell died on August 27th, at the advanced age of seventy-nine years, during more than fifty of which he had been on the staff of Harrow School. Educated at Weston-super-Mare and Cheltenham College, he went to St. John's College, Cambridge, where he became a Wrangler and was also placed in the second class in the Classical Tripos; later he was elected a fellow of his college. After two terms as a master at Clifton College he went to Harrow, the first master appointed by Dr. Butler. Among his contemporaries at Cambridge and his intimate friends were Prof. W. H. H. Hudson, Dr. E. A. Abbott, Lord Morley, and Prof. Henry Jackson.

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MR. BUSHELL became a housemaster in 1868, and in 1881 took over a large house, Grove Hill, from the Rev. F. Rendall. His activities were many; as a master he showed ability, energy, and versatility; socially, a ready wit and power of repartee. At Cambridge he was one of the original Volunteers, and captain from 1861 to 1865. At Harrow he was hon. captain of the school corps and chaplain of the local battalion for thirty-eight years. He was lord of the manor of Caldey Island, and under his guidance an attempt was made to restore the observance of the Benedictine rule within the Church of England.

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MISS AGNES DE SELINCOURT, principal of Westfield College, University of London, died on August 31st, after a cycling accident on the 21st of the month. Miss de Selincourt was staying at Ravenscar, and was riding down a steep hill near Robin Hood's Bay when she was thrown heavily to the ground and her wrist broken. She was apparently recovering from the accident, but septic poisoning set in and she died quite suddenly.

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MISS DE SELINCOURT, who was a sister of Prof. Ernest de Selincourt, of Birmingham, was born at Streatham in 1872, and educated at Notting Hill High School and Girton and Somerville Colleges. In 1906 she went out to India as a missionary; she was the first principal of the Lady Muir Memorial College for Native Women at Allahabad. In 1912, after ten years' service, she was compelled to give up work in India, and in the following year was appointed principal of Westfield College. During her short tenure of office she won the respect and affection of teachers and students by her enthusiasm and her intellectual powers.

THE death is announced of Mr. H. R. Woolrych, late headmaster of Blackheath School. Mr. Woolrych was educated at Rossall and Pembroke College, Oxford. In 1883 he returned to Rossall as a master, but remained there only a year, and then became second master at Blackheath, where he succeeded Mr. H. D. Elam, who died recently while still master at St. Paul's. After ten years as second master Mr. Woolrych succeeded Mr. Bendall and by his enthusiasm and ability raised the school and its institutions to a high pitch of efficiency. After a period of epidemics the school suffered a decline in numbers at a critical financial period, and Mr. Woolrych, whose plans for its re-establishment did not meet with general support, resigned. In 1905 the school was closed. Mr. Woolrych, who employed his time in coaching and writing, will be deeply regretted by his former pupils, by whom he was greatly admired.

\* \* \*

By the death of Mr. Henry Cust modern education has lost one of its powerful advocates and critics. Mr. Cust, shortly before his death, had collected a mass of information with regard to commercial education, but unfortunately, was unable to make the use he intended of this material. The Central Committee for National Patriotic Organisations, of which Mr. Cust was chairman, has just issued "Training for Business at Home and Overseas," a statement of the facilities now available in the United Kingdom, with an introduction by Mr. Cust.

\* \* \*

MR. REGINALD BURGESS, headmaster of Portora Royal School, Enniskillen, was drowned at Castle Rock, Co. Londonderry, when going to the assistance of a governess who had got into difficulties whilst bathing.

\* \* \*

EDUCATION is well represented in the first list of appointments to the Order of the British Empire, though in several cases the award is due rather to war work successfully undertaken than to educational work. Mr. Cyril Jackson, formerly a prominent figure in the organisation of London education, becomes Knight Commander; Miss E. P. Hughes, a zealous member of a number of educational bodies and one of the foremost authorities on educational and social problems in Wales, becomes a member of the new Order. Among the Knights is Prof. Herbert Jackson, and among the Commanders are Profs. S. J. Chapman, F. W. Keeble, and J. F. Thorpe.

MR. W. A. BROCKINGTON is appointed an officer of the Order, and his appointment is expressly associated with his office of Director of Education for Leicestershire. Mr. W. T. Estlethwaite's appointment to the same rank is ascribed to his position as clerk to the Winton and Pendlebury Urban District Council, but he is known to educationists as the secretary to the Education Committee and for his honorary work connected therewith.

\* \* \*

MR. W. H. WAGSTAFF is retiring from the headmastership of the Central Foundation School for Boys, Cowper Street, E.C., a position he has held for the past fourteen years. Mr. Wagstaff went to Cowper Street from Wellington College. During his headmastership Mr. Wagstaff has found time to serve on various committees and educational bodies the deliberations of which have always been more useful for his clear insight, cool judgment, and incisive comment.

\* \* \*

MR. G. D. DUNKERLEY, of Watford Grammar School, is to serve on the Departmental Committee appointed by the President of the Board of Education to inquire into the principles which should determine the fixing of salaries for teachers in secondary and technical schools. Mr. Dunkerley was last year the chairman of the Association of Assistant Masters and may be relied upon to put the Association's point of view ably and cogently before the committee. Mr. Abbott will doubtless represent the views expressed by the Association of Teachers in Technical Institutions.

\* \* \*

THE personnel of the Secondary-School Examinations Council is now announced. Six of the members are engaged in secondary schools at the present time, five of them are appointed by the Teachers' Registration Council, and one, Miss Burstall, by the Northern Universities' Joint Matriculation Board. The council has only three women members: Miss Burstall, with Miss Gadesden and Miss Lees, who were appointed by the T.R.C. Good as these representatives of secondary-school teachers and women are, they do not form a large enough part of the council to render its constitution satisfactory. A Secondary-School Examinations Council of whom less than half are engaged in secondary schools, with a chairman with a very short experience as a schoolmaster, can scarcely be expected to meet with the approval of the secondary schools.

ONLOOKER.

## OXFORD LOCAL EXAMINATIONS, JULY, 1917.

### HINTS FROM THE EXAMINERS' REPORTS.

SENIOR.—The examiners report that the use of inappropriate methods of approximation in *Arithmetic* is very common indeed. It appears to be an extreme instance of a tendency to inaccuracy of thought and statement, which characterises to a growing extent the work done in the examination. The practice of omitting a large portion of the working is also on the increase in arithmetic (as in other mathematical subjects), and especially in sums in which methods of approximation are used. Candidates who are guilty of this practice must be heavily penalised.

In connection with *Précis Writing*, the examiners say only one general comment on the work seems called for, but that one is of high importance. Relatively few candidates seem at all adequately to realise the distinction between a précis and a paraphrase. Two results ensue—both undesirable. Either the examinee produces a paraphrase, inordinately lengthy and of excessive literary flavour, with the meaning intact, or he produces a précis using about one-half of each sentence, the other half being omitted, this latter course achieving the right length, but badly muddling the sense of the original. Both these results were unexpectedly common.

The average of the work in *General Literature* sent in was good. The chief defects were (i) irrelevance, (ii) verbosity, (iii) careless English, (iv) unintelligent reproduction of dictated notes.

The examiners in *English History* report there is still a tendency to write too much, either by way of verbiage or by giving more than is asked for. Teachers would do well to discourage the use of "slang" expressions in writing. A lack of precise and detailed knowledge accounts for a vagueness of statement which often leads pupils into grave mistakes. A clearer historical perspective is, in many cases, to be aimed at as a means of avoiding confusion between e.g., kings of the same name. Attention should be directed to the spelling, the writing, and the setting-out of the answers on the page, which often are faulty. While candidates should be encouraged to think for themselves and to form their own judgments, they should at the same time be taught to express their views with moderation. In attempting to answer the question regarding England's possessions at certain dates candidates showed much ignorance. There were also many instances of failure to understand what was meant in the questions by the terms *fifteenth* and *sixteenth* centuries. The pre-Norman period was, as usual, little known. The sixteenth century had been well taught and well learnt. The Napoleonic times were evidently too hard for most of the students to master, and the answers were confused and indefinite. Few candidates attempted the geographical question; very few of these understood the meaning of the word "campaign," and those who did produced a poor map. The examiners would like to suggest to teachers that more time should be given to (a) learning how to answer an historical question, (b) map-work.

The evidence of weakness on the purely physical side of *Geography* is more strongly marked than usual. Such subjects as ocean currents and the effects of different atmospheric pressures upon weather conditions are little understood, and questions upon them have been rarely and very imperfectly answered. A more careful sense of proportion is desirable. For example, the importance of river and canal navigation is too often made to appear a leading (if not the principal) cause of the modern importance of London as a capital and commercial centre. While such facts are geographically good, they should be given their proper value, and not exaggerated. There was a want of ability to trace results from causes, e.g. the facts as to the natural vegetation areas of South Africa were baldly stated, but were rarely explained. Candidates should be deterred from loose usage of "up" and "down" for north and south; the course of the Nile was frequently traced from the delta to its source, instead of *vice versa*.

The examiners in *Latin* say that neither in composition nor in grammar could the work submitted be regarded as quite satisfactory. It was nearly always excellent in intention, but often disfigured by elementary and inexcusable mistakes. The obligatory passage for unseen translation was done better than in March, but the optional passages were translated well by only a few. Of the prepared books, Cicero was very badly known, Cæsar very fairly, Virgil, as a rule, quite creditably. The translation of about half the candidates was inaccurate, notably in some half-dozen centres. The answers on subject-matter, and those on history of literature and grammar, were better, being deficient rather in quantity than in quality; in grammar, however, explanations should often have been confined more strictly to the real difficulties.

The examiners in *Mathematics* report that the work in *Arithmetic* is generally very fair. A noticeable feature is the unreadiness of candidates to recognise at sight the factors of numbers and the consequent tendency to overload work with fractions not in their lowest terms. The work in *Geometry* was on the whole better. Many candidates did not know how to find the area of right-angled triangles. The conditions of congruence of right-angled triangles should be more exactly stated. Much of the work in *Algebra* was of very poor quality, though high marks were readily obtained by the more intelligent candidates. A large number read some of the questions carelessly, and work correct in method was constantly marred by a total disregard of signs.

While much excellent work in *Chemistry* was sent in by the better candidates, who reached a thoroughly good standard, the work of a large proportion was weak. The impression was given that a great number had not undertaken sufficient laboratory work during the school year. The fact that the gram-molecule of all gases occupies the same volume was very generally unknown, and, as a consequence, the simple problems set presented great difficulty. Much ignorance was shown regarding the properties of such common chemicals as sodium chloride and cupric oxide. A large number proposed to analyse cupric oxide by heating to drive off the oxygen, and a correct method of pre-

paring the red oxide of copper was rarely given. The account of a catalytic reaction often consisted of bald statement, with no attempt at an explanation or any suggestion as to how the reaction could be carried out in practice. Many candidates wasted valuable time in writing long descriptions of apparatus instead of giving a clear sketch. Pupils would benefit greatly if they were given more practice in writing out concise descriptions of their laboratory work. The questions attempted with most success were those on phosphorus and on the formation and setting of mortar. Good reasons for regarding air as a mixture were also given by most.

Those who failed in *Practical Chemistry* did so less from a lack of knowledge of what tests to perform than from one or more of the following causes:—

(a) Failure to obtain a perfect solution and one suitable strength.

(b) Neglect of dry tests for insoluble solids.

(Candidates should always make it quite clear to the examiner how a solution has been obtained; they should also be careful to state if they use a different solution for certain tests, e.g. whether they do or not use a solution made in hydrochloric acid when testing for a chloride.)

(c) Jumping at conclusions—instead of stating the observations from which they were derived.

(d) Inability to distinguish between sulphur dioxide and hydrogen chloride gases—due to reliance on untrustworthy tests.

(e) Neglect of the use of blue glass in testing for potassium flame, especially in presence of sodium.

**JUNIORS.**—The *Essay* work was fairly good. Candidates should be more carefully taught how to construct a complex sentence. Frequently there was little or no attempt to subordinate clauses, and the syntax was not so much elementary as amorphous. A string of co-ordinate clauses would be set down, not even separated by commas, each of which would introduce a completely new idea, which should have received distinct treatment. There was also but little arrangement of subject-matter. Candidates should, before settling pen to paper, consider more what they propose to write.

In *Grammar* more attention should be given to parsing. For instance, candidates very frequently cannot distinguish between adverbs, conjunctions, and prepositions.

The only real weakness noticeable in *Geography* throughout was in the elementary principles of climatology, for the answers on the British Isles contained a vast amount of inaccurate or vague information respecting the Gulf Stream, and only very few could give a satisfactory explanation of the term "mean January temperature." The latter answers showed a surprising absence of practical experience in keeping weather records in school, and in the use of such records when made.

The outstanding feature of the answers on the British Isles was a vagueness and looseness of expression which led to the belief that definite information

question was lacking. Candidates should be discouraged from attempting questions about which they have nothing more than a slight general knowledge, as, for example, the question on the form and coast-line of the Atlantic Ocean. They should be conversant with the geographical meaning of phrases like "a mean annual temperature of 40° F.," which the majority interpreted very insufficiently.

A not inconsiderable number of candidates seem to prefer Latin without having any but the slightest acquaintance with the language. There are many mistakes, of quite an elementary character, which occur again and again, in paper after paper, with unerring regularity. The Cæsar is usually not well done. The cases in which a passage is accurately translated to grammatical English are rare. The more usual result shows ignorance, not only of Cæsar's meaning, but also of the grammars of the two languages. The questions on the subject-matter of Cæsar were, as a rule, badly answered.

The most notable feature in the French exercises omitted has been a defective knowledge of accidents of genders, as well as of the correct employment of tenses. The short sentences were often well translated, and candidates had a wider vocabulary than in previous years. One conspicuous defect was inaccuracy in the use of accents.

In Arithmetic, the answers to the question on factors were frequently unsatisfactory, many candidates being ignorant of the meaning of prime factors and of their use for the purpose required. In the question on the areas of figures with given dimensions the weaker candidates were hopelessly confused in dealing with the quantities and units involved. The method of contracted division would have been useful in the working of one question, but correct and intelligent applications of this method were very rare. The absence of rough checks was very marked; many errors could have been corrected if candidates had been taught to consider the reasonableness and possible accuracy of their answers. Want of accurate knowledge of such common facts as the number of days in the various months, the number of days in a year, the number of yards in a mile, etc., was often the cause of erroneous results.

In Geometry, the power of intelligible explanation was largely lacking in such a question as "How would you test whether a circle could be drawn through four given points?" even when the student really knew the correct method. Superfluity or over-conciseness in argument was also a common fault.

Some confusion often existed as to the fundamental definitions of "parallelogram" and "isosceles triangle." Geometrical construction was accurate in the main, except the drawing of parallel lines. Such construction should not be too faint, and a brief explanation should always be given when necessary for clearness. For instance, when a candidate is asked to draw a triangle equal in area to a given quadrilateral, he should state which of the many triangles in his figure is the one required. The size of such drawings should always be given in the question; the scale should not be altered, as was done by many candidates.

The following points should be noticed in *Elementary Algebra* :—

(1) Many failed to remember that the unknown quantity  $x$  must represent a number. Such statements as "Let  $x$  = the bicycle," or the "distance," or the "time" (with no mention of "pounds," or "miles," or "hours," etc.), were very common.

(2) The formula for the solution of quadratics was usually either wrongly quoted or wrongly applied. It would be safer to avoid this method of solution.

(3) The transposition of terms, division by the coefficient of the unknown, and, above all, the expression of one unknown in terms of other unknown, seem to present great difficulties to many.

In Botany many of the answers to the questions gave the impression that candidates had not carried out, for themselves, or seen carried out by others, many of the experiments described. A very large proportion of the answers were irrelevant. There were a few drawings of exceptional merit, but the majority were inexact, and far too small. Throughout the paper many of the figures were too small and lacked clearness. There was a tendency to give sketches which did not contribute to the value of the answers they were supposed to illustrate. For example, an answer to a question on seed dispersal would be illustrated by a fruit with a hole in it to denote where a bird had pecked at it.

The general standard of the answers in Theoretical Chemistry is very satisfactory. The candidates show considerable ability in devising simple experiments, and the descriptive work is generally well done. It is, therefore, surprising to find that the structure and chemistry of the Bunsen flame are not properly understood. The simple calculation appears to have presented considerable difficulties to many candidates, mainly owing to an apparent lack of training in arranging the work in a logical sequence.

The following faults were common in Heat :—

(1) Confusion between the terms "absorption" and "conduction"—e.g. "Flannel is a bad absorber of heat."

(2) Confusion of units of measurement—e.g. "Coefficient of linear expansion is the increase in length of 1 gram of a substance in being heated through 1° C."

(3) The application of a freezing mixture (ice and salt) to determine the freezing point of water.

## THE MONSOON.<sup>1</sup>

**INTRODUCTION.**—This article aims at the recapitulation of the main facts usually connected with the term "the Indian monsoon"; at the investigation of the facts in order to determine those which, either wholly or in part, are unique to India; at the division of India into definite rainfall regions and the demonstration that similar regions occur elsewhere in the world; at an inquiry into the question whether the monsoon winds and the monsoon rains are dependent on, or independent of, each other; and, in

<sup>1</sup> Abridged from an article specially written for *Indian Education* by Mr. B. C. Wallis, author of "The Teaching of Geography," in the Cambridge Handbooks for Teachers, and of "A Geography of the World" (Macmillan). Copyright in it is not reserved, and it is hoped that it may be reprinted and serve to arouse some interest in the unsolved problem of the Indian rainfall.—Editor, *Indian Education*.

conclusion, at a statement of some of the factors which produce the Indian monsoon.

**THE ATMOSPHERE.**—The atmosphere may be considered as consisting of two portions: the inner portion, called the *troposphere*, which extends upwards in the neighbourhood of India to a height of from eight to nine miles, not a great deal higher than the top of Mount Everest, and the outer portion, called the *stratosphere*. In the stratosphere there are no clouds; the temperature of the air remains unchanged at about 60 Centigrade degrees below freezing point.

Recent investigations in connection with the upper air have demonstrated that the more important movements in the troposphere are controlled by the conditions which prevail in the upper layer of the troposphere, i.e. in the air just beyond the level of the highest peaks of the Himalayas. Recent discoveries have further demonstrated that the upward movement of the air in the centre of a cyclone often occurs against the influence of temperature; in such cases the rising air does not rise because it is warmer than the surrounding air, but because it is forced upwards into air which is warmer than itself.

Since the monsoon is of supreme importance to the people of India, it is well to emphasise these facts and to lay stress upon the fact that the troposphere over India is largely cut off from the troposphere over the rest of Asia by the wall of rock which bounds India upon the north.

In view of these circumstances, and remembering, also, that our knowledge of the top layer of the troposphere is strictly limited, it is impossible to be dogmatic about the causes of the winds which blow over India, and it may be affirmed that the hypothesis which states that the south-west monsoon is due to the high summer temperatures and low summer pressures over Central Asia must at present be regarded with suspended judgment, if not with considerable suspicion.

**INDIAN WINDS.**—Over the Bay of Bengal from November to March the winds blow mainly from the north-east. In November at the head of the Bay the wind is mainly from the north, south of Palk Strait it is variable, and between these limits it blows parallel to the coast from  $20^{\circ}$  N. to the mouth of the Kistna and obliquely on-shore on the coast of Madras. In December the wind is from the north-east all along the Deccan coast, especially between  $20^{\circ}$  N. and the Kistna mouth. In January the wind is not so definitely from the north-east, especially near Calcutta; in February the weakening has become more marked, and in March the wind is easterly south of the Kistna mouth and south-westerly north of it. From November to March the wind over the Arabian Sea west of meridian  $70^{\circ}$  E. is north-easterly; near the Deccan coast, however, the wind is mainly from the north, except in March, when the wind blows from the north-west. Over the land the wind comes from the north or north-west over the northern plains, from a north-easterly direction over the eastern Deccan, to be turned towards the south by the higher ridges which lie to the west of the

peninsula. These land winds do not usually cross the Western Ghats; in late March, however, the winds from the Arabian Sea cross the Western Ghats and reach Calcutta and the head of the Bay as winds from the south-west. Such north-easterly winds are not peculiar to the Indian area. A comparison with the winds of the Atlantic and Pacific Oceans in the same latitudes shows that the winds, there called north-east trades, are similar to the winds of India. There is not the slightest need, therefore, to "plain" the north-east winds over India as "the turn of the monsoon," or to formulate the hypothesis that these winds blow because the sea near the equator is hotter than the land of India. On the other hand, the Indian winds during the remainder of the year are in many respects unique features of the climate of India. Speaking generally, winds reach the west coast from the Arabian Sea, from north-west during April and May, and from the west from June to September, and continue their course in a whirl against the direction of movement of clock-hands across the Deccan, moving eastwards across the Bay, and north-westwards along the face of the Himalayas. The whirl lacks regularity of shape, since there is a distinct lobe of low pressure near the Kistna mouth. The centre of the whirl lies between Patna and Benares in April, moves towards Quetta during May, and remains near Quetta until September. In October the general situation distinctly weakens in regularity, as the pressure system has changed. These unique wind conditions merit a special name and justify the use of the term "monsoon" to summarise the wind circulation over India from late March to the end of September.

Thus the winds of India are normal during the cool season when the north-east trades blow, and abnormal during the hotter weather when the monsoon occurs.

**THE PRECIPITATION OF MOISTURE.**—In connection with the deposition of rain, especially over large areas such as India, it is important to draw a distinction between the quantity of moisture precipitated during the year either in the form of rain or snow and the relative intensity with which the precipitation occurs at various seasons. To maintain this distinction it is convenient to use the terms "rainfall" and "raininess." Rainfall refers to the total average fall of rain during the year, and raininess refers to the proportion of the year's rainfall which may be expected during a specified portion of the year. Rainfall answers the question, "How much is the precipitation?" raininess deals with the questions, "When does the precipitation occur, and why then?" Rainfall numbers will differ for different places, but the total of the twelve monthly rainfall numbers for the year will always be 1,200. (See Appendix, p. 350.) In India rainfall values lie between 5 in. and 400 in. per annum, and monthly raininess values may lie between 5 and 400 per cent. If, for example, a place has August raininess 300 per cent., this means that the chances are that one-quarter of the year's rain will fall at that place during the month of August. For the purpose of determining the char-

istic features of the rainfall of any area, or of determining the rainfall regions of a country, rainfall values are much more useful than numbers which show the average rainfall either in inches or millimetres.

**REGIONS OF DEFINITE RAINS.**—There are three areas in India where the deposition of rain is characterised by a marked intensity at one period of the year. Between these areas lie two areas in each of which the precipitation betrays a mixture of the characteristics of the two areas which bound it, so that in each of these areas the rain reaches what is called a "maximum" twice a year. Thus India may be divided into five rain regions :—(1) Winter rains; (2) winter and summer maxima; (3) summer rains; (4) summer and late-season maxima; (5) late-season rains. No attempt will be made here to give precise boundaries for these regions, which necessarily merge one into the other; it will suffice to indicate the major portions of each region.

Winter rains occur in the north-west of India, i.e. on the cool side of the hot desert. Quetta may be taken as a typical place. Such rains occur in parts of the North-West Frontier Province, the Punjab, and Kashmir. The total rainfall is small, so that the region of winter rains is an arid area. The winter rain regions of the world tend to be arid and to lie between 30° and 40° N. lat. In the hot deserts of the world, along the eastern edges and along the edges nearest to the equator, the rains occur during the summer months. Such conditions prevail in India. From the southern portion of Bombay Province across parts of Central India, the Central Provinces to Rajputana and the Himalayan slopes, there is a region where the raininess reaches a great intensity in either July or August. The intensity is so marked that at least half the year's rain falls during these two months. Further away from the Indian hot desert, in Assam, Burma, Bengal, Bihar and Orissa, summer rains also occur, but the intense raininess is spread over a longer period, and the雨iest month is marked by rather less than a quarter of the year's precipitation, and the rainy season lasts five months.

The examples in the Appendix illustrate the fact that the summer rains of India are normal in season, quantity, and intensity of raininess in relation to both latitude of the area and the situation of the hot deserts. The geographer has no reason to draw a distinction between the "monsoon rains" of India and the summer rains which prevail in similar latitudes elsewhere in the world. Along the coast of Madras in the north southwards lies a region where there is a marked maximum raininess late in the year. (Table IX., p. 350.) Similar late-season rains are recorded in Annam. In Mysore and in Burma, near Mandalay, away from the coasts in both cases, the rains occur twice a year, in May and in October and November. Similar intermediate regions occur in South America and Central America. (Table VIII.)

**INDIAN RAINS ARE NORMAL.**—The facts briefly enumerated in the preceding paragraphs, and summarily illustrated by the examples contained in the Appendix, lead but to one conclusion—the rains of

India are not unique to that country; they are normal to their latitude and to the situation of each region in relation to the hot desert. In common with the rains of Africa, Australia, and America in similar latitudes, they show a marked relationship to the height of the sun in the sky at noon. The hot deserts occur near the tropics, in higher latitudes the rains come when the sun is lowest in the sky at noon, and in lower latitudes the rains tend to reach a maximum just after the sun has passed the zenith. Between the tropics it is a characteristic phenomenon that the maximum raininess swings with the sun but lags behind it.

**WINDS AND RAINS.**—The main factor in the production of the rainfall regions of India is not the winds. This conclusion appears to be a flat contradiction to the daily experience of individuals who notice the coincidence in point of time between the "monsoon rains" and the monsoon wind. The rains of India are normal, the monsoon is abnormal. The examples of South Africa and South America show that if the monsoon did not blow, there would still be summer rains in India. Along the west coast of the Deccan the wind blows on-shore from the sea from the end of March onwards, yet the rains fall with conspicuous suddenness in June; similarly, in Burma and Assam the on-shore winds from the Bay precede the coming of the rains by weeks. In the case of the Madras coast the rains precede the trade-winds in the north, and the winds last long after the rains have ceased, i.e. during January and February. During July and August a strong wind sets from the south-west from the African side of the Arabian Sea on-shore on the coast of Sind; the monsoon as an on-shore wind is fiercest there, yet Sind is arid. In the south of the Deccan the circulation of the winds during the monsoon brings on-shore winds from the west during the summer and the rains occur in November.

**THE MONSOON AND THE RAIN.**—Until the factors which produce summer rains and total rainfall in the lands which are adjacent to the hot deserts have been worked out, the effect of the monsoon upon the rainfall of India must be a matter of conjecture so far as the statement of any positive connection is concerned. The most that can be said at present, and it is pure hypothesis, is that the monsoon limits the hot desert of India to the north-west, and that, therefore, the total rainfall of India is higher than the latitude warrants on account of the monsoon.

**FACTORS OF INDIAN RAINS.**—One chief factor in the production of the rains lies in the high temperatures of the surface waters of the Bay of Bengal and the Arabian Sea; during the monsoon the water is at an abnormally high temperature, so that the lower layer of air in the Indian area is well supplied with moisture. The temperature is always above 80° F., and reaches a maximum of more than 85° F. in the Bay. Along the Madras coast the rains occur just before the neighbouring sea-water falls below 80° F. in temperature. The Indian area thus has a plentiful supply of moist air, which is particularly effective because of the cyclonic storms which originate in the Bay. During the months from May to December, when the rainy season occurs in areas near the Bay, there is a

strong probability of storms. In June and July a storm may originate near the head of the Bay and proceed very far up the Ganges Valley; in August such storms are less likely. Later in the year the storms lie further south. In September they cross Hyderabad; in October and November they cross the Deccan still further to the south. Consequently, the raininess of these areas occurs at the time when the storms bring large quantities of very moist air from the Bay. On the other hand, the Arabian Sea is not so stormy. Only in June, the month of heavy rains on the coast, the storm track lies parallel to the coast, just like the Ganges Valley storm track runs parallel to the Himalayas.

**TEMPERATURE AND THE RAINS.**—Two facts may be noted in connection with the temperature of the air over the land. The winter rains and the cool-weather rains occur with a rising temperature; the summer and late-season rains occur with a falling temperature. It does not appear possible in a general way to separate rainfall from temperature in such fashion as to say definitely which is cause and which is effect. For example, the monsoon months are lower in temperature than the months which precede them; does the low temperature produce the rains, or does the rain produce the low temperature, or do both rain and low temperature result from a common cause which acts downwards from above?

**CONCLUSION.**—The teacher of geography will, probably, have read so far in this article with a growing feeling of disappointment. He may have expected a cut-and-dried statement set out in a conclusive fashion which would show him exactly what he should teach regarding the monsoon. He is disappointed, but only with reference to the explanation of the phenomena. The facts are set out, and the causes of the phenomena are still to seek. Yet this article has one important function—it indicates the predominant fact in the science of geography, that deduction usually leads to error. Based upon the general laws of physical science, which are valid on the small scale and in the laboratory, an attempt has been made to set up general climatic laws, and to enable the learner to deduce from those laws explanations of various facts. Such deduction is usually fallacious, for the very simple reason that the learner is not sufficiently acquainted with the detailed facts to know for certain that the general law applies to the particular case. No more alarming example of such error can perhaps be imagined than the conjecture that the rains and the monsoon are the effects of a gigantic seasonal arrangement of land and sea breezes based upon the "furnace-flue" of Central Asia. Yet, although this article is on the whole negative in its results and destructive in its tendency, it has some advantages for the busy teacher. It provides the opportunity to affirm in a truly scientific spirit: "Here our knowledge ends; hence there is much work still to be accomplished." It suggests ideas which should be brought specially to the test of experience in schools in India. It lays down a definite rainfall division for India, in place of the treatment of India as a unit. It brings India into line with the rest of the world.

#### APPENDIX.

(The months are numbered consecutively; No. 1 January in the northern hemisphere, and July in southern hemisphere.)

TABLE I.—*Winter Rains.*

Country	Place	Annual rainfall in inches	Months											
			1	2	3	4	5	6	7	8	9	10	11	12
India ... Quetta ...		10 225 260 225	126	44	20	85	52	10	10	30	30	30	30	30
U.S.A. Hollister,		Cal.	14	232	270	201	91	44	11	—	—	15	62	51

TABLE II.—*Winter and Summer Maxima*  
(approximately equal).

India ... Peshawar.	13 146 121 176 155 73 50 120 182 75 14 4
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TABLE III.—*Winter and Summer Maxima* (unequal)

India ... Nagar ...	49 129 159 141 80 66 67 185 192 163 20 20
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TABLE IV.—*Intense Summer Rains.*

India ... Bikaner ...	11 33 33 22 19 65 151 341 370 133 8 1
India ... Pachimarki.	76 11 9 7 6 9 149 383 332 236 36 39
Peru ... Arequipa...	148 — — 5 6 20 224 735 112 78
Mexico Mazatlan...	8 45 10 7 6 6 246 351 320 95 2

TABLE V.—*Less Intense Summer Rains.*

India ... Rangoon ...	99 1 3 4 20 150 223 255 235 193 34 3
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TABLE VI.—*Early Summer Rains.*

India ... Bombay ...	80 1 — — 7 316 410 234 192 32 1
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TABLE VII.—*Late Summer Rains.*

India ... Sardanali...	31 4 16 14 47 33 229 179 268 348 90 3
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TABLE VIII.—*Summer and Late-season Rains.*

India ... Mysore ...	30 5 6 17 96 216 98 92 125 168 277 8
India ... Paramati...	25 13 14 12 73 188 56 51 147 173 204 15
Jamaica Kingston...	96 46 23 43 33 175 141 65 158 178 235 1
Siam ... Bangkok...	15 2 13 22 68 190 162 153 131 252 150 51

TABLE IX.—*Late-season Rains.*

India ... Saidapet ...	51 20 12 5 13 37 47 80 119 136 261 72
Annam. Hue ...	26 46 61 20 28 42 34 39 46 190 362 261

#### THE SECONDARY-SCHOOL EXAMINATIONS COUNCIL.

The constitution of this council, which will assist the Board of Education in the co-ordination of numerous public examinations for which pupils in secondary schools are prepared, has been announced.

The council will consist in the first instance of the following persons, with the Rev. William Temple, formerly headmaster of Repton School, as chairman:

Nominated by—	
Oxford and Cambridge Schools Examination Board ...	Mr. P. E. Matheson Fellow of New College
Oxford Delegacy for Local Examinations ...	Mr. H. T. Gerrard Fellow of Worcester College, Secretary of the Delegacy
Cambridge Syndicate for Local Examinations ...	Mr. J. H. Flather Secretary to the Syndicate
University of Bristol ...	Sir Isambard Owen Vice-Chancellor
University of Durham ...	Dr. W. H. Hadow, Vice-Chancellor
University of London ...	Dr. R. M. Walmsley Chairman of the Board to promote the extension of University Teaching

Nominated by—  
Northern Universities' Joint Matriculation Board ... ... ...

County Councils Association ... ... ...

Association of Municipal Corporations ... ...

Association of Education Committees ... ...

Chairs' Registration Council ... ... ...

Sir Alfred Dale, Vice-Chancellor of the University of Liverpool
Prof. B. M. Connal, University of Leeds
Miss S. A. Burstall, headmistress, Manchester High School for Girls
Mr. H. Mellish, C.B., Chairman of the Nottinghamshire Education Committee
Dr. H. Lloyd Snape, Director of Education for Lancashire
Mr. Councillor Dawson, Chairman of the Hull Education Committee
Mr. J. G. Legge, Director of Education for Liverpool
Not yet appointed
Mr. P. Abbott, Head of the Mathematical Department, Regent Street Polytechnic, W.
Miss F. M. Gadesden, headmistress, Blackheath High School for Girls
Miss E. S. Lees, Clapham High School, S.W.
Mr. G. Sharples, headmaster, Waterloo Road School, Manchester
Mr. A. A. Somerville, Eton College

For the present Mr. C. Cookson and Miss M. Kennedy, H.M. Inspector, will act as secretary and assistant secretary.

The council entered on its duties on September 12th, and is provided with accommodation at the offices of the Board of Education at South Kensington. All communications on the subject of secondary-school examinations should be addressed to the Secretary, Board of Education, Victoria and Albert Museum, Exhibition Road, South Kensington, London, S.W.7, and the envelope should be marked "Examinations Council."

nor without a "school certificate" or some similar qualification. (2) That this conference is of opinion that the representation of teachers in schools should be not less than that of universities on the proposed Secondary-School Examinations Council. (3) That this conference considers that the statutory representation of acting teachers to serve on education committees of local authorities is a necessary condition of sound educational reform, and instructs the committee to pursue an active policy in the matter. (4) That the regulations of the Board of Education (Explanatory Note, Section III.) need modification or supplement, in so far as they seem to suggest transference of pupils at or about sixteen from one secondary school to another, experience having already shown that such transferences, unless made at a considerably earlier age, involve great educational loss to the pupil.

THE President of the Board of Education, at a conference of educational authorities and teachers at York on September 14th, gave a sketch of the Government's education policy. No system of public education, he insisted, can be satisfactory which does not succeed in attracting good men and women into the teaching profession. We cannot get good teachers unless we are prepared to pay for them, and to this end the Government has provided a large additional grant to be spent chiefly on the augmentation of the salaries of teachers in elementary schools. He went on to explain that the Government proposes to insist on a full-time education up to the age of fourteen, and on part-time day continuation classes for all young persons except those who have obtained full-time secondary education up to the age of sixteen, or are otherwise under suitable instruction. The new Education Bill, he pointed out, does not go into details of curriculum; the vital need it is intended to meet is the raising of the education of the people to a higher level. The Bill provides for great elasticity and adaptation to local requirements, and education authorities will be asked to prepare schemes and be given a liberal allowance of time for the process. They will consider how time should be distributed, and be expected to consult the industrial interests of their localities. On the following day, addressing a meeting of teachers at Sheffield, Mr. Fisher emphasised the importance the new Bill attaches to physical and social education.

AN organisation under the name of "The White Cross" is being established by Dr. Maria Montessori in America. It is a body—similar to the Red Cross—designed to treat and save the children of war by a special method of education. Dr. Montessori suggests preparing teacher-nurses to go to the assistance of these children. The plan is to start a free course to prepare volunteers to undertake the intellectual care of children, and it will include first aid, knowledge of nervous diseases, dietetics for infants and children, isolation, special psychology, domestic science, agriculture, language, and a practical course in the Montessori method. The plan is then to send out working groups to France, Belgium, Serbia, Rumania, Russia, and other European countries, each consisting of four to six persons—head, secretary, two teachers, and two outside workers. Each group would

## ITEMS OF INTEREST.

### GENERAL.

THE annual meeting of the Headmasters' Conference is held this year in September at the City of London Hotel, when Dr. David presided. The following resolutions were among those adopted:—(1) That this conference regrets, on educational grounds, the recommendation of the Royal Commission on Public Services in India that the age limits for the examination be lowered from twenty-two to twenty-four to nineteen to nineteen. If, however, the Government decides to lower the age, the conference strongly urges that in the educational interest of the candidates, and of other boys taught with them, no candidate be admitted to the examination under the age of eighteen,

be located in places where refugees are already gathered. These groups of White Cross workers would, as soon as they are in the field, prepare others, such as war widows and orphan girls, and thus the work of this new society will multiply rapidly. The organisers are anxious to obtain the co-operation of all in England who are interested in such work. Offers of voluntary aid and of funds are needed. Those interested in the scheme are invited to communicate with Mr. C. A. Bang, 20 Bedford Street, London, W.C.2, who has promised to assist in the formation of a committee.

THE memorandum embodying the minimum scale of salaries recently published by the Association of Teachers in Technical Institutions directs attention to the fundamental principles which should govern the adoption of salary scales throughout the country. It points out:—(1) That the initial salary must be sufficiently large to attract men and women of high qualifications, and that it should compare favourably with the salaries paid in other professions which require similar standards of intellectual capacity and expense of training; (2) that salary scales should offer attractive careers and prospects; (3) that it should be reasonably possible for a well-qualified and successful technical teacher to attain a competence of at least £300 per annum at the age of thirty. The adopted scales for qualified assistants range from £200 to £300 by annual increments of £15, and then to £450 by increments of £20. The initial salary for the head of a department is fixed at £350 to £500, according to the work and responsibility, with annual increments of at least £25 to a maximum of £500—£750. The payment for part-time teachers in charge of a subject is fixed at £30 per session of sixty hours, rising to a variable maximum, and that of assistants in charge of a class, but under supervision, at £20, rising to £30. The adoption of the principle of a scale for part-time teachers—always a difficult question—should do much to remove a long-standing and real grievance.

TECHNICAL teachers, as a class, have been far from well treated in the past in the matter of salaries and status, and the suggested scales are most reasonable if the institutions are to be kept efficiently staffed in view of the anticipated calls for technical experts from the various branches of industry. The work required is strenuous and exacting, often extending into late evenings, and doubtless, in the near future, the salaries offered will of necessity have to be on a higher scale than the minimum quoted above. The fundamental principles referred to could scarcely be stated more explicitly and convincingly, and they can be earnestly recommended to the careful consideration of all governing bodies.

A SUMMARY has been issued, over the signature of Mr. Bolton King, of the opinions of head teachers of elementary schools in Warwickshire "on certain points connected with the training of teachers." On the whole, the document does not make cheerful reading, for a rather gloomy view is prevalent among the said head-teachers, both of the student-teacher system and of the efficacy of the training-college course. The pupil-

teacher system seems to be preferred, and it is widely held that a boy or girl intending to become an elementary-school teacher should begin to teach at fifteen years of age. As to the training colleges, whilst a majority hold that at twenty-three the non-collegiate teacher is the better, three out of four agree that at twenty-five the collegiate teacher is the better. The latter is surely the true test. The older generation of elementary school teachers are rather too ready to condemn a young teacher fresh from college because he or she cannot at once control a class of sixty, and they are rather slow to acknowledge the advantages of a superior education for the teacher. "I think," says one, "that what we need is teachers who are really skilled in teaching. It is a teacher's business to teach, if in this he is a failure, even though educated to a degree standard, the children suffer, the State suffers, and it is, in fine, a waste of public money." Another might very well say, "I think that what we need is teachers who are themselves really well educated. It is a teacher's business to teach, and if he is deficient in knowledge and culture, even though he is able to manage and control a class of sixty, the children suffer, the State suffers, and it is, in fine, a waste of public money."

IT is, we think, one of the supreme merits of the Workers' Educational Association that it values education for its own sake, and not merely for the sake of some collateral advantage. If we rightly understand the association's point of view, it regards education as a process of turning out men rather than of turning out workmen. This liberal aim is illustrated in F. R. H. Tawney's suggestive pamphlet, entitled "Some Thoughts on Education and the War," just issued by the association. He reminds us that "education is just now constantly commended on the ground that it is commercially profitable, that it leads to professional success, that it increases national wealth—that it is, in a classic phrase, 'our principal weapon in coming commercial war.'" No doubt it is, says Mr. Tawney, but "an interest in education which elicited on these grounds is an insecure foundation for educational reform, because, if it is given for commercial motives, it will also be withdrawn for commercial motives, and because it is the nature of the mind that such motives are of primary importance to us, and that short views even of commercial profit." This view is really of a piece with that of our most eminent man of science, that there is no short cut to industrial supremacy via elementary technical instruction. Science for its own sake, pursued with liberal and disinterested aims, is the only sure foundation of science technique applied. So with education in all its phases. The longest way round is known to be often the quickest way home. In education it is the only way home.

THE report of the National Union of Teachers for the year 1917 presents the usual features, which make it a useful handbook, not only for members of the union, but also for others who need a work of reference to matters connected with the elementary-school teaching profession. For though the basis of membership, as set forth in an appendix to the rules, is broad, the vast majority of the members are, of course,

chers in elementary schools. The growth of the union since its foundation in 1870 is truly colossal. In 1870 there were 400 members; in 1880 about 12,000; in 1890 about 16,000; in 1900 about 44,000; in 1910 100,000; and in 1916 94,000. As the privileges of membership have increased, and the operations of the union enlarged, the rate of subscription has gradually been raised from 1s. to 12s. per annum. A perusal of the twenty-seventh annual report of the executive gives some idea of the wide range of the union's activities. The general report includes the special reports of the Education Committee, the Examinations Board, and Committees on Finance and General Purposes, War Organisation, Tenure, Professional Conduct, Rural Schools, Salaries, Secondary Schools, War Aid Fund, Benevolent and Orphan Fund, etc.

THE report of the United States Commission of Education for the year 1915-16 appears, as in previous years, in two volumes, the second of which is devoted to the statistics of education in the States. The first volume comprises thirty-seven chapters, of which forty-nine contain reports on every conceivable form of American education—urban, rural, elementary, secondary, higher, vocational, medical, legal, engineering, commercial, agricultural, home, kindergarten, etc. Then follow several chapters dealing with education in other countries. It is natural that we on this side of the water should turn to these chapters first, and especially to the one on "educational activities in European countries." Here we have a concise and interesting statement which is nevertheless of deep and sometimes poignant interest. It is recorded, for instance, that "at Rheims, in the midst of the bombardment, schools were installed in the cellars of many houses. . . . The greater part of the school-leavers having entered the service, all these efforts fell upon the women teachers. Four times every day they risked their lives in the streets, where few houses remained to offer shelter in the moment of danger. They bravely faced extreme peril in order to reach the post of duty and of their devotions—the subterranean school." The last chapter of the report gives a statistical summary of education in other countries than America. The figures are often most interesting and instructive. We find, for example, that in regard to the proportion of the whole population to be found on the elementary-school roll in European countries, Scotland stands near the top with 17.38 per cent., Serbia at the bottom with 5 per cent., and Russia at the bottom with 3.77 per cent. These, of course, are pre-war figures.

THE June number of the *Columbia University Quarterly* signalises the entry of America into the war by giving about seven-eighths of its contents to war topics, discussed by leading members of the University. One of the articles deals with America's duty and responsibility in helping to solve the food question; another with the dangers surrounding economic distances after the war; another with the significance of the British Empire of the new Imperial policy initiated by the present Government; and a fourth with the medical service of the United States in the war.

There is also placed on record President Butler's speech expressing the University's "Greetings to the New Russia"—a speech containing grave warnings which have been speedily and abundantly justified. The speech in which the president expressed the mind of the University on the occasion when it honoured the envoys of France and England is included, and M. Viviani's reply. The editor gives an interesting account of the mobilisation of the University for war purposes. We have received also specimens of "Columbia War Papers," a series of pamphlets reminding us of those issued by the Oxford Press. One of them discusses the economic problem of "Bread Bullets," another the question of university military service, and a third is an extremely practical and businesslike "Directory of Service," showing "how and where each member of the community may find work for the nation." Columbia evidently got to work energetically and methodically as soon as America became directly involved in the great struggle.

MANY evidences on a small scale have recently been forthcoming of a tendency on the part of administrators to make certain that the education given in private schools shall be efficient. Various authorities have instituted proceedings to prosecute parents who persist in sending their children to private schools which, in the opinion of the authority, are inefficient and should be closed. The Education Committee of the London County Council has taken a step along the same path in adopting a resolution of the Higher Education Sub-Committee that private schools should be registered and inspected. It is urged that secondary education suffers from the inefficiency of some private schools, and that, therefore, the local authority or the Board should inspect private schools. On the same occasion it was recommended that admission to the examinations conducted by the Civil Service Commissioners should be confined to those candidates who produce evidence that they have reached some recognised standard of general education; for example, Second Division candidates should have passed one of the first examinations referred to in Circular 840 of the Board. This recommendation is suggested in order that parents may recognise the advisability of a secondary education for their children.

DR. CYRIL BURT, the expert in psychology to the London County Council, describes a successful experiment in "Educative Convalescence" in *The Child* for August. Crippled soldiers are received in the Princess Louise military wards at the Heritage Craft Schools at Chailey, Sussex. To each soldier two crippled boys are assigned as orderlies, and the infirmities of the orderlies match those of the soldier. The experienced boys teach the soldier how to make the best use of his limbs; for example, two boys who have each lost both arms are waiting for a soldier in the same predicament; the elder of them has developed a marvellous power of foot—he can shave himself and paint in oils. The crippled guests follow their crippled hosts into the workshops and avidly take up some occupation in carpentry, rug- or toy-making, with the result that life soon takes on a new complexion and

the future becomes again bright and full of hope. The school itself was originally founded as a school for the maimed and cripples from the slums. It is an economic success; the pupils contribute substantial sums towards the expenses, and nearly all ex-pupils are economically self-supporting; one boy with double crutches has £70 in the War Loan. "It is good to give the unfortunate a living; it is still better to raise them to a life worth living."

An "Osborne" for the mercantile marine has just been opened at Pangbourne. Cadets will enter between thirteen and a half and fourteen years, spend two years in residence at the college at a fee of £80 per annum, and have a third year's practical training at sea for a fee of £50. The college has the approval and support of the Admiralty and the Board of Trade, and arrangements exist for the enrolment of the cadets in the Royal Naval Reserve. Qualified cadets will, subject to the exigencies of the Navy, have a fourth year's training with the Fleet under allowances which are equivalent to an annual grant of £73. The total cost of the four years' training works out at an average of about £35 per annum, *plus* the cost of outfit, etc. Several scholarships have already been provided, says the *Times Educational Supplement*, by the leading shipping companies, and such companies will give preference to officers who have received this training, which will enable the cadet, after a short period of service in an approved cargo steamer, to qualify for the Board of Trade examination for second mate.

THE Madras Legislative Council recently debated the question of the provision of elementary education in the province. There were, we learn from the *Educational Review*, in the last educational year, 28,000 primary schools, against 24,000 five years before; the number of male scholars had increased during the quinquennium from 830,000 to just above a million. At the earlier date a scheme had been promulgated to equip 4,500 new schools, and to provide buildings for 2,500 existing and 1,250 new schools within three years. Lack of funds has sadly interfered with the proposed development, so that, instead of 4,500, fewer than 600 new schools have been opened. The increase in the number of officially recognised schools noted above, therefore, includes the change of about 3,400 private-venture schools into recognised schools. The educational service of the province is further handicapped by an inadequate staff of inspectors. The average school life of the pupils has remained constant at just above two years. The population of Madras Province exceeds forty-one millions, and the total enrolment of schools and colleges is fewer than 1½ millions. In these circumstances one is not surprised to learn that several villages are without schools at all.

EDUCATION in the Cape of Good Hope Province exhibits signs of healthy progress. A 6 per cent. increase in the enrolment of white pupils brings their number above 110,000, which makes, with the enrolment of non-European pupils, a total of a quarter of a million pupils. The schools have been increased by 134 and the teachers by 548. The teachers now exceed 10,000, so that there is an average of twenty-five pupils

per teacher, and two-thirds of the latter are certified. We lately noted the fact that the salaries of teachers had been improved. The schools should rise 5,000 within the next year, and nearly half at present possess school libraries. More than 10,000 pupils are boarders, and the number tends to increase. With scattered white population rural schools are of great importance; any farmer who can get together twenty pupils and can supply two rooms, one for the school and one for the teacher, will receive the support of the local school board to start a school. The accommodation provided by some farmers is lacking in privacy for the teacher, with the result that school boards urged to acquire, as a gift from the farmers, a few acres of ground to erect thereon a school and teacher's dwelling of such generous dimensions that boarders may be taken. It is calculated that such arrangement will be economical if the new school made to serve instead of three established schools.

THE thrifit movement in Australian schools has received an impetus from the Commonwealth issue of War Savings Certificates and Stamps. The post-sterling certificates may be bought for 17s. 6d., and are repayable in full in three years from the date of issue. The stamps for 6d. and 2s. 6d. are sold at post offices, and booklets are provided into which they may be pasted. Teachers are requested to co-operate with the Government in this measure of war saving on lines familiar in English schools.

#### SCOTTISH.

WHEN Broxburn Higher Grade School was opened on August 27th it was found that practically the whole of the teachers—about forty in number—had absented themselves, and the pupils had to be sent home for another week's holiday. It appears that in June the Board, at the request of the staff, agreed that the holidays should extend from July 20th until September 4th. The local Trades Council, however, approached the Board and asked it to make the holidays begin a week earlier and to reopen on August 27th. This the Board, without consulting the teachers, agreed to do. The teachers entered a protest against this decision on the ground that most of them had already engaged holiday accommodation for the period ending September 4th, and asked the Board to reconsider its decision. The Board declined to make any alteration, and the teachers intimated that they would not appear at school until the date originally fixed. The incident must be regarded as unfortunate in the interests of school discipline, and the responsibility for it must be shared by both parties. The teachers were driven to this action not merely by this single example of high-handed action on the part of the Board, but by a whole series of similar inconsiderate and autocratic acts. Representations and protests had proved of no avail, and they felt justified in taking drastic steps to bring the Board to reason. Doubtless they have succeeded, but for even a small revolution of this sort there is a price to pay, and the teachers themselves may have to pay it.

LORD SCOTT DICKSON, speaking at the close of the High Court of Justiciary in Glasgow, said that the

tion of youthful offenders, both boys and girls, unded the serious consideration of the general sic, and especially of all having to do with administration of justice. The evil had existed a long time, and various causes had been put as wholly or in part accounting for it. The was generally regarded as mainly responsible for present conditions, but it had aggravated, not ed, the evil. In 1913 the Prison Commissioners ed attention to the subject and to the urgent d for taking remedial measures against it. It was easy to devise an effectual remedy, but the first was to recognise the magnitude and gravity of situation, and to unite all the forces of progress in effort to set it right.

Is HOLMES, M.P., speaking on the Scottish Esti- es, said that teachers should be given a much gr share in guiding and shaping the educational ly of the nation. If it were asked whether chers were worthy of such confidence and responsi- ty, an answer would be found in the recently pub- ed report of the Scottish Education Reform Com- ee. A more far-reaching sketch of national re- ms had never before been published, and in his ion it was worth a whole wilderness of Blue oks. The authors of that work well deserved the ks of Parliament and the confidence of the nation. At a meeting of the School Board of Glasgow it s agreed by a majority to rescind the resolution which debarred the board from making any grant unattested teachers while on military service, and allow them two-thirds of such sum as would have en payable to them had they attested. By this action board has tempered justice with mercy. While it not be claimed that those who have been taken upuriously are at all on the same level as those who ne forward of their own free will, they are still ting their life at the hazard, and deserve some con- eration from their employers. It is certain that attested men will not grudge them this addition their shilling a day.

GENERAL disappointment is expressed at the failure the Scottish Secretary to introduce the eagerly- ked-for Education Bill. While making every allowance for the unforeseen contingencies that are und to arise in times like these, we feel that a little driving power on the part of the Secretary and a le less effacement on the part of the Scottish members would have placed the country by this time possession of the terms of the Bill. Intimation had already been made that the Bill was intended merely discussion by the country during the recess, and at no attempt would be made to carry it beyond the standing stage meanwhile. For this, half an hour Parliamentary time would have sufficed, and it is fully conceivable that, with a little push, this could t have been obtained. It may be said that the English Bill reveals with sufficient clearness the main lines of the corresponding measure for Scotland, but no light is shed by the English Bill on the vital questions of educational area and educational authority, or on the delicate and difficult problem of the voluntary schools.

THE Education Department has, at the request of the Ministry of Munitions and the Food Controller, issued a circular to school managers and teachers asking for their co-operation in the collection of horse-chestnuts. It has been found by experiment that horse-chestnuts can be used in place of grain in certain industrial processes essential to the prosecution of the war. For every ton of chestnuts which are harvested half a ton of grain can be set free for human consumption. The nuts, it is explained, may be collected either from the trees or from the ground after being shed, but in all cases it is essential that they should be fully ripe. Before storing the nuts the outer green husks should be removed, as otherwise heating of the heaps is certain to take place. When the collection in any district is complete, notice should be given to the Director of Propellant Supplies, Ministry of Munitions, 32 Old Queen Street, London, S.W.1.

#### IRISH.

THE results of the annual examinations of the Intermediate Board of Education which were held last June were published at the end of August. They are summarised as follows:—

##### BOYS.

Grade	Senior	Middle	Junior	Total
Number examined ...	965	... 1,697	... 4,137	... 6,799
Number who passed—				
With honours ...	169	... 299	... 561	... 1,029
Without honours...	512	... 728	... 1,905	... 3,145
Total ...	... 681	... 1,027	... 2,466	... 4,174

Percentage of passes ... 70·6 ... 60·5 ... 59·6 ... 61·4

##### GIRLS.

Grade	Senior	Middle	Junior	Total
Number examined ...	553	... 1,157	... 2,906	... 4,616
Number who passed—				
With honours ...	124	... 205	... 344	... 673
Without honours...	262	... 520	... 1,232	... 2,014
Total ...	... 386	... 725	... 1,576	... 2,687

Percentage of passes ... 69·8 ... 62·7 ... 54·2 ... 58·2

The total number examined this year was larger than last year, when the number of boys was 6,644 and of girls 4,532. Compared with last year, there is, on the whole, a slight improvement in the percentage of passes. The percentages then were: For boys, Senior Grade 65·1, Middle 61·3, Junior 54·8; total 57·8. For girls, Senior Grade 70·3, Middle 63·7, Junior 52·9; total 57·5. The low percentage of passes—for out of every five candidates three pass and two fail—suggests that the standard of passing is at present sufficiently high and that the Board should have considered carefully before making the conditions of passing more stringent for next year. Probably it has considered the matter, but a higher percentage of passes would encourage both pupils and masters. When pupils work through the course with the knowledge that two out of five will fail there must be a lack of the incentive of hope for the weaker ones. For the schools, as there is only a fixed sum of money to divide by way of grant, the proportion of passes

perhaps scarcely matters, as their respective amount of grant would not vary much with a higher percentage, but it is an unsound principle that pupils who fail should not count in the allocation of grants, and it is a healthy sign to see the Board in its latest report protesting against it.

WITH regard to the raising of the standard next year, there are two points: first, geometry is made compulsory for boys, and, secondly, the written examination in experimental science and drawing remains, and although this year the percentage of passing in these subjects is very high, there will naturally be a tendency in the course of time to make the examination in them rather more difficult.

IN the recent examinations nineteen boys were deprived of their pass altogether, and one of his pass in one subject, for having brought notes into the examination hall, or for having given or received assistance during the examination, and one girl was also deprived of her pass for the former reason.

THE list of awards of exhibitions and prizes has not been issued at the time of writing these notes, but is expected shortly.

THE Intermediate Board has issued two alterations in the programme and one in the rules for 1918. It was pointed out in our July number that there was probably an oversight in the rules, and this has proved to be the case, for the words "for boys" are to be omitted in Rule 32 (D), thus making two other subjects, in addition to the compulsory ones, necessary for both boys and girls. The alterations in the programme are: (1) In the Junior Grade English, Scott's "Talisman" may be taken as an alternative to Scott's "Quentin Durward"; and (2) in the Middle Grade English, instead of the whole of Thackeray's "English Humorists," an alternative is offered of three of the Humorists, Addison, Steele, and Goldsmith, together with twelve of Addison's Essays.

#### WELSH.

THE Welsh Members of Parliament left the Llandrindod conference severely alone, because it was not merely a conference of local authorities; the academic element was too strongly represented. The Labour Party, on the other hand, objects to the large preponderance at the meeting of the representatives of local authorities: a meeting of the Executive Committee of the South Wales Labour Federation has passed a resolution protesting against the proposal to establish a National Council by the very indirect method of election by local authorities, themselves indirectly elected, and declaring that no such council would be satisfactory unless it were elected directly by the people of Wales. These views were to be brought before the annual conference of the Federation on September 29th. The teachers, again, are by no means satisfied with the idea of being represented by persons co-opted by the local authorities, or that of only obtaining the right of nominating representatives subject to the approval of the local authorities. It is rumoured that the large towns may withdraw their representatives.

SOUTH WALES is well to the fore in the matter of town-planning. There are several "garden cities" and "garden suburbs" in Glamorgan. Such a suburb has been laid out in a splendid situation overlooking the Bristol Channel at the western end of Barry. It was declared open on September 1st, a competition being formally dedicated to the children as a playground and a horticultural show held. There is an important town-planning association for South Wales which has devoted special attention to the problem of hill-side towns and villages.

MR. HOWELL T. EVANS, of Cardiff High School, the author of several books on Welsh history, has been appointed to the headship of Aberystwyth County School.

THE governors of Ruabon County School, the headmaster of which, Mr. J. R. Roberts, has become headmaster of Cardiff High School, have appointed Mr. D. J. Bowring acting headmaster for the period of the war; and Mr. Rees, the second master of Ystradgynlais School, has been appointed to the headship.

THERE were two remarkable scenes at the National Eisteddfod at Birkenhead. Three years ago two military choirs competed at Bangor, one from the 10th Welsh Battalion and one from the 17th, the latter being the winners. On the platform this year was the conductor of the winning choir of three years ago, a wounded soldier in khaki—the only survivor. He was decorated by General Owen Thomas with black and white rosettes sent by relatives of his comrades who had fallen.

THE other touching incident occurred at the "chairing of the bard." When the name of the successful competitor, Hedd Wyn, was called there was no response, and the Archdruid announced that the winner was Private Ellis H. Evans, of Trawsfynydd, who had been killed in France since he sent in his composition in July. The chair for which there was no occupant was solemnly draped in black, and the bards in procession laid on it verse-tributes to the memory of one of the most promising of Welsh writers.

THE controversy as to whether the motto "Ich dien" borne by the Prince of Wales is really "Eich dyfodol bids fair to be settled by the letter of Dr. Gwenog Williams Evans to the *Times*, in which he shows that the latter form is one that could not have been used at the time of the presentation of the baby prince to the Welsh at Carnarvon. There would in any case be no difficulty in providing the Prince of Wales with one of many far finer Welsh mottoes than this.

THE allocation of the Fisher grants, or rather the delay in their allocation, and the reluctance of the authorities to use them for the purpose for which they were intended, are causing great dissatisfaction among teachers. In more than one county the elementary school teachers are talking of striking, and in a certain county school, the governors of which devoted only one-fourth of the increase in grant to the improvement of salaries, the staff returned the cheques, with the result that they immediately received double the amount.

It cannot be said that the teachers shared the strong confidence expressed on p. 5 of the Regulations for Secondary Schools, nor do they greatly share the authorities' grasp of the situation. Some people think that the 60 per cent. mentioned as the treasury contribution to elementary-school teachers' salaries has something to do with the proportion of grant that secondary-school teachers should receive; others made the fact that the Fisher grants had not been received the excuse for putting off the consideration of grievances two years old affecting teachers of evening technical classes—with which the grants have nothing to do; others, again, are still waiting for the report of the Departmental Committee on Salaries—the report of which may probably be expected in twelve months, and will also not all be concerned with this matter.

On the other hand, some authorities have taken prompt action, much appreciated by the teachers. Merthyr County School awarded the whole grant, making an all-round rise of 30 per cent. on present salaries. Neath, in anticipation, gave rises of £25 and £30. Monmouthshire governors met in July and voted to raise salaries £30 all round. Holyhead and Lagan have given rises varying respectively from £10 and £60 down. Llandudno has given the full amount asked by the assistants, while Wrexham, Bangor, and Fishguard, in view of the holidays and consideration of the financial pressure on teachers, sent cheques for £20 to all assistants at the end of the term.

## BRITISH FOREIGN POLICY.

*British Foreign Policy in Europe to the End of the Nineteenth Century.* By Prof. H. E. Egerton. xii + 60 pp. (Macmillan.) 6s. net.

SIR ROBERT MORIER, one of the ablest of Victorian diplomats, and one of the few who fathomed the designs of Bismarck, remarked in a letter to Jowett, written soon after the close of the Franco-Prussian War:—"It is the curse of living in an island that foreign politics take hold of our imagination in the dreamy sort of way that all things were taken cognisance of by the savants." A little later he returned to the theme, and declared that he perceived that there was "at present on the part of the public in England a want of caring for international questions and an ignorance regard to them, combined with a definite wish not to be enlightened, which is truly appalling." The neglect of foreign affairs which Sir Robert Morier lamented forty years ago saw but little amelioration during the subsequent period, and the country as a whole drifted up to the verge of the Great War in 1914 without either knowing or wishing to know what were the principles of British foreign policy.

This defect in British political education has to some extent been made good since the outbreak of the war. The keenest interest in international politics has naturally been aroused; many books, widely read, have dealt with every aspect of the European situation; magazines and newspapers have subordinated, as never before, domestic to foreign information; special periodicals, such as *The New Europe*, have devoted themselves exclusively to the problems of the nations. Schools and colleges, tutorial classes, and reading circles have turned their attention with remarkable unanimity to the study of general modern history, and

at least half a dozen new text-books have appeared to aid them in their studies. None of these volumes, however, deal with Continental affairs specifically from the British point of view, and there was ample room for a volume limited to the task of expounding the British attitude towards European problems as they presented themselves successively for solution. This volume has now appeared from the experienced and able pen of Prof. H. E. Egerton, of Oxford.

Prof. Egerton has followed the method which he adopted in his standard work on "British Colonial Policy," issued some years ago, and by means of it he has produced a book which forms a most fascinating and illuminating companion to those manuals which confine themselves to a mere narrative of events. It is indispensable, however, that those who wish to derive full pleasure and benefit from the sidelights on history thrown by this sketch of British policy should come to it with a considerable knowledge of the persons and the processes prominent in nineteenth-century annals. For Prof. Egerton's work is, indeed, not so much a reasoned and consecutive exposition of the principles of British diplomacy as a collection of the views and opinions of leading British statesmen and publicists on the critical events of the continent of Europe as they occurred. The reader is for the most part left to find out for himself whether or not there is, amid the maze of contemporary verbiage, any guiding thread of leading ideas. Towards the close of the volume, however, Prof. Egerton comes to his aid, and says:—"Upon the whole, England has stood for two principles, both in themselves sacred, yet often apparently inconsistent with each other—fidelity to existing treaty undertakings and sympathy with national aspirations." It is noteworthy that precisely these two principles were placed in the forefront of his own aims by George Canning in the third decade of the century. Canning added two others to them, viz. maintenance of the balance of power in Europe, and conservation of British interests abroad.

It is easier to lay down general principles in politics than to decide in days of emergency how they are to be applied. Much of the interest of Prof. Egerton's varied selection from original and contemporary sources is derived from the spectacle which is presented of British statesmen wrestling with complex international problems and trying to solve them by the application of recognised formulæ. The principle of the sanctity of treaties, which Burke proclaimed to be the very foundation of "the political system of Europe," guided James I. so far back as 1604 in his dealings with Spain (p. 35), made Britain the resolute defender of the settlements of Utrecht in 1713 and Vienna in 1815, and caused her to protest vehemently at violations of solemn engagements by Russia in 1870, by Austria in 1908, and by Germany in 1914. Support of the principle of nationality, of course, manifested itself fully only in the nineteenth century, for not until the Napoleonic Wars did nationality assert itself as a dominant force in European politics. But from the days of Canning onward a succession of Ministers has displayed deep devotion to the national aspirations of Greeks, Belgians, Italians, Bulgarians, Serbians, and other oppressed peoples. The maintenance of the principle of the balance of power has meant primarily that Britain has resolutely opposed every attempt of any ambitious ruler—the Emperor Charles V., Philip II. of Spain, Louis XIV. of France, Napoleon, William III. of Germany—to establish an overlordship of the Continent. The principle of the conservation of British interests has meant in practice, with a quite remarkable persistence, the prevention of any Great Power from obtaining a military foothold in the Netherlands, and from establishing at Antwerp or Amsterdam a base of attack upon Britain's insular security.

Prof. Egerton's estimates of the characters and achievements of the leading directors of British foreign policy are fresh, independent, and suggestive. The Tudor and Stuart statesmen are treated first, for Prof. Egerton holds that there was nothing that could be called a national foreign policy prior to the close of the fifteenth century. The purposes that guided Wolsey, Burleigh, James I., Cromwell, Charles II., and William III. are briefly indicated. It is not, however, until the sketch reaches the eighteenth century that it becomes at all full and complete. The Second Hundred Years' War between England and France is treated with knowledge and discrimination, the importance of the colonial aspect of the struggle being duly emphasised. Among nineteenth-century Ministers for Foreign Affairs Castlereagh, at the beginning of the period, and Salisbury, at the end, come in for the warmest commendation. Palmerston, the great central figure of the century, is praised for the substance of his policy, but blamed for the unnecessary irritation and antagonism which he aroused in diplomatic circles by his truculent manner. Disraeli and Gladstone for different reasons—the one for his pandering to the Turk, the other for his feebleness and vacillation—are severely censured.

The numerous quotations which Prof. Egerton presents from the speeches and letters of the great men of past days supply many apposite parallels to the circumstances of to-day. For instance, the danger of political prophecy is well illustrated by Pitt's estimate (in accordance with which the military establishment was reduced) that in 1792 "there never was a time in the history of this country when we might more reasonably expect fifteen years of peace than we may at the present moment." The perils of a premature peace are exemplified in the Treaty of Amiens, 1802, the moral of which is strikingly expounded in a notable utterance of the same great Minister. The opinions respecting Prussia expressed by George II. (p. 67), Gouverneur Morris (p. 109), Charles James Fox (p. 130), and George Canning (p. 138) are all refreshingly like those which patriotic Britons hold at the present day.

Prof. Egerton's book provides a notable vindication of British foreign policy and (in a supplementary chapter) of British command of the sea. As such it deserves wide circulation at the present time.

F. J. C. HEARNSHAW.

### A WORTHY CONTRIBUTION TO THE STUDY OF SOPHOCLES.

*The Fragments of Sophocles.* Edited, with additional notes from the papers of Sir R. C. Jebb and W. G. Headlam, by A. C. Pearson. Three vols. £270, 330, x+350 pp. (Cambridge University Press.) 45s. net.

THESE volumes form a worthy conclusion to Jebb's great work. They contain little of Jebb's own work, for he left only a certain number of notes, and Headlam's contribution is not great, although it includes many good translations in verse of the longer fragments. But it may safely be said that Jebb could not have done the work better. There is, in fact, no such edition in existence of any of the dramatic fragments. Mr. Pearson's learning is wide and deep; he seems to have mastered the whole literature of this difficult subject, and the reader leaves the work convinced that nothing of importance has been overlooked. To this learning Mr. Pearson adds a faultless scholarship and a real literary taste, which are not always to be found in editors of the

painstaking modern school. A large number of fragments are included which are not to be found in the earlier collections, the most important being "Ichneutæ" and "Eurypylus," and other lesser finds from papyri.

A long introduction discusses the sources of the fragments, and the scholars to whom we owe most of them. Mr. Pearson shows an almost uncanny skill in tracing the borrowed goods from one to another, and we see that to take other people's quotations is now no new habit. We owe the preserved plays to the schoolmaster, and most of the fragments to the grammarian or commentator. Future critics will find here a convenient guide to show who are trustworthy. Even a grammarian's memory is not infallible; and sometimes they give a wrong name, as when the important fragment 581 is attributed by Aristotle to Eschylus.

The schoolmaster may perhaps think that this book is not for him, but he is wrong. Apart from excellent scholarship, which may teach him much about the plays of Sophocles, considerably more than 1000 (the number 123 is the number given by Suidas), cover a wide ground; and since Mr. Pearson discusses plots with great care, the chief stories of Greek mythology come before us. Mr. Pearson (with many but not all, of those he draws from) is very clever in his suggestions for placing the various fragments in their proper scenes, and not seldom a far-reaching deduction as to plot is drawn from a single line. How much can be made out of how little may be seen, for example, in the discussion of "Antenoridæ." For the learning of the notes we may refer to *Icaria* 56, *new* 337, and frag. 705, 767, taking specimens of very different kinds.

The subject-matter of the fragments is disappointing on the whole. A good many seem to have been preserved as maxims, in which a proverb or a common-place is put neatly; the value of silence seems to have been a favourite thought with the author. But many are quoted for forms or rare words, and any interest they may have for mankind is accidental. Very few are of any length. The longest is the "Ichneutæ" recovered from Egypt to the length of some 400 lines (not all complete), and precious as the only example of a satyric drama by Sophocles. The next is the "Eurypylus," horribly mutilated. If only the same were not so tantalising!

### SOME EDUCATIONAL EXPERIMENTS.

It is almost a commonplace with many of us that the introduction of self-government into our public schools fundamentally changed their character and helped make them the best schools of their kind which the modern world has seen. Even if we cannot accept this statement as it stands, we can scarcely doubt that Dr. Arnold and his fellow-workers took the first steps towards a revolution in our educational methods. External authority was to some extent superseded by an appeal to the boys' own social interests. Compulsion tended to give place to self-determination. Unfortunately, however, this principle has been generally applied only in secondary schools, and in these schools has been confined to the organisation of the common life outside the classrooms. It is only in quite recent years that some elementary schools have introduced what are called "free" methods of discipline and teaching, and that a few schools have attempted to organise their whole life and work upon "free" lines. The results attained have shown the great possibilities of "free" education, but the experiments which are being tried are too sporadic to form

basis of a far-reaching educational reform. We therefore, welcome the establishment in America a Bureau of Educational Experiments,<sup>1</sup> for the purpose of spreading information about experiments of this kind and of making the experiments themselves more general. The Bureau is issuing a series of bulletins, which the first six are before us.<sup>2</sup>

The first two bulletins deal with school equipment and discuss respectively Playthings and Animal Families in Schools. As regard playthings, the principle is laid down that toys should not be devised as instruments of instruction, like, e.g., the Montessori apparatus, but should be such as to enable the children express their own imaginative interpretation of the world in which they live. The children should build, draw, play shop, etc., as their interest prompts them, and so doing they gain a fuller grasp of the fundamental processes of social life.

The next three numbers contain descriptions of certain Experimental Schools. These schools differ in many ways, but they all aim at giving as much scope as possible for freedom and initiative. Formal lessons are comparatively rare, and the children mostly keep themselves in order. The training is given chiefly through games, occupations, and constructive activities more like those of a well-ordered home than of a school of the traditional type. A good deal of skill and knowledge, e.g. of arithmetic, is acquired in this way, and as the children grow older various methods are adopted for developing their intellectual interests. It seems clear that in these schools the adoption of "free" methods has been justified by its results. The children appear to be more intelligent, more courteous and self-controlled, happier and physically stronger than average children in ordinary schools. There are, however, indications that "free" methods should be supplemented by a reasonable exercise of authority, and in any case the teacher is more important than the method.

The last bulletin gives an extensive bibliography covering the whole field of Psychological Tests. It will prove useful to the increasing number of teachers and social workers interested in a method of assessing individuals which is proving capable of rendering valuable service both to education and to psychology.

Most of these bulletins are concerned mainly with young children, but the principles they discuss and illustrate are applicable to all stages of school life. This is to this fact that the bulletins owe their chief value for English readers. In England, as in America, there is a general movement towards less oppressive methods of education. We believe less in punishment and drudgery, and more in interest and freedom. But the movement at present suffers from an inadequate grasp of fundamental principles. It illustrates our liability to become the victims either of an unreasoning conservatism or of an equally irrational desire to adopt the latest fads. It will realise possibilities only if we can advance to a more scientific attitude towards the whole problem of education. Such an attitude involves, among other things, careful and systematic use of educational experiments. We ought to ascertain what types of discipline and teaching tend as a matter of fact to develop the kind of men and women we desire. It is here that the work of the Bureau may give us help, and we ought to take full advantage of its assistance until we have some corresponding institution of our own.

H. BOMPAS SMITH.

## METEOROLOGICAL OFFICE PUBLICATIONS.

*Circular E. 03.* Meteorological Office. Arrangements for the Supply of Copies of the Daily Weather Report for Use in Schools, etc.

It is the business of the teacher of geography to introduce his pupils, so far as is possible, to sources of first-hand information in geography. The publications of the Meteorological Office have recently undergone considerable improvement, and it will be opportune to direct attention to their usefulness.

First in value are the weather reports. The Daily Weather Report can be obtained for a year for £1. Each report shows the facts regarding pressure, temperature, rainfall, winds, cloudiness for the morning of the day of issue, and synoptic charts summarising the weather conditions on the morning and evening of the previous day. Experience shows that pupils may know thoroughly the arrangement of winds and pressure, etc., separately in *theoretical cyclones* or *anticyclones*, and yet completely fail to realise that a cyclone in the Bay and an anticyclone in Iceland together control weather conditions both around and between them. Pupils fail to realise that cyclones and anticyclones are but parts of the pressure distribution over a given area. A steady course of examination of the Daily Weather Report is probably the best means towards such a realisation. A cyclone is not a separate and distinct occurrence, although for the sake of definiteness it may be taught separately.

A supply of copies of the Daily Weather Reports for a given day or a succession of days can be specially printed provided notice is sent to the Meteorological Office, South Kensington, S.W., not later than the first post on the day of issue. The charge for these copies is 7d. for 10 sheets, postage extra. On application from schools the Director can usually supply a set of one month's charts or a set of five of each day's reports for a period of fourteen days. In both cases these back numbers are supplied for the cost of postage alone.

The Weekly Weather Report is a four-page sheet which contains the information regarding the week and also states the normal values for that week in the year. The weather components for the parts of the year and of the season which have so far elapsed are also tabulated in comparison with the normal for each of the twelve meteorological districts of the British Isles. Single copies cost 6d. and a year's subscription £1 10s.

The Monthly Weather Report is issued at the same prices, but is a much larger publication. In addition to monthly statistical summaries, there is a general description of the month's weather, which is illustrated by five maps showing the average pressure, temperature, and duration of sunshine, the total rainfall, and the movements of depressions during the month. These charts are particularly useful for school work, as they illustrate the process by which the isobar and isotherm maps of the atlas can gradually be compiled.

In addition to the weather reports, the M.O. also publishes monthly climatic charts, one for the North Atlantic Ocean and the Mediterranean Sea, and another for the Indian Ocean and the Red Sea. These charts indicate normal values for pressure, temperature, etc., and are published at 7d. each, post free.

For the study of the climate of our islands and of India these charts have no equal with regard to the normal monthly conditions which prevail in the surrounding seas. The direction and rate of flow of the

<sup>1</sup> The office address is 70 Fifth Avenue, New York.  
<sup>2</sup> The price of each is 10 cents, with the exception of the sixth, which costs 25 cents.

currents of sea and air, the temperature of the surface waters and the layer of air above them, are all indicated, and serve to give precision to our teaching with regard to ocean currents, the monsoon, and the winter climate of Britain.

## RECENT SCHOOL BOOKS AND APPARATUS.

### English.

*Longfellow: Tales of a Wayside Inn.* Edited by J. H. Castleman. 223 pp. (Macmillan.) 1s. 3d.—It is to be hoped that this and similar volumes will do something to stay the evil influence of the expert critic on the texts chosen for our schools. Already the schools, obscurely guided by the lecture-rooms of the universities and by other academic shepherds, are turning a deaf ear to, and a scornful eye on, the "Lays of Ancient Rome." Scott's "Marmion" will follow the "Lays"; probably Longfellow has preceded them. The publishers alone, so far as we can see, stand between the critic and the child's natural food; for the academies would feed him on adultism. "Hiawatha" indeed defies them, and it is well for the child that it does. But the publishers do not give our schools the "Tales of a Wayside Inn" when they omit the "Bell of Atri," the "Legend Beautiful," "Elizabeth," and the "Mother's Ghost." Besides, in numberless passages the little interludes show Longfellow, with all his shortcomings, to be the only successor of Chaucer; Morris caught the music but not the spirit. The several parts of the "Tales" appeared in 1863, 1872, and 1874, and surely it would have been possible to include at least a selection of parts 2 and 3. But there is no word, if we except a very vague hint on p. xvi., that this is but a third of the collection. With this grumble we can praise without stint the present volume for its print, its notes, and its introduction. The critic may say what he pleases, but Longfellow remains the Chibiabos of the young.

"He has moved a little nearer  
To the Master of all music,  
To the Master of all singing."

*Robin Hood: His Merry Exploits.* Retold by Charles Wilson. 158 pp. (Harrap.) 1s.—If we except Ritson and Child, little has been written on the subject of the poor man's knight, Robin Hood. The "Cambridge History of English Literature" is almost silent on him; Mr. Jacobs cannot give him a place in his folk-tales, and he is in danger of being represented by a ballad or two alone. This is a pity, for Robin Hood is, or was, a formative person, and books or people who were once formative should remain in the history of literature. Besides, the work and life of the famous outlaw who lived so often that he may be said never to have lived at all will compare well with the work and life of Tristan and Lancelot, his social superiors, but his knightly peers. The little book before us follows, we suppose, the famous Ritson, though it diverges from "The Life and Exploits of Robin Hood," published by Milner and Sowerby in 1807. It contains seventeen chapters, all well written. There are some adequate illustrations. It is a pity that a brief preface did not tell the young person where to go for more information about one whom even the mild Wordsworth honoured.

*The English Journal.* March, April, May. (University of Chicago Press.)—The issues before us include articles on such varied subjects as kinaesthesia and speech defects; teaching composition by means of letters; types in the study of literature; advertising

and the usual stock-in-trade of the English reformer. All the articles are bright and juvenile; a serious educational magazine "on this side" would consider the elementary and unacademic. But it is precisely the elementary and unacademic breath that we require, and the summer examination months with their load of undigested work make it refreshing to turn to paper in which there is, at all events, solicitude for taught.

### History.

*A History of Modern Europe, including Great Britain.* By A. J. Grant. xx+340 pp. (Longmans.) 4s. net.—This is the third edition of the third part of Prof. Grant's well-known and justly popular "History of Europe," first published five years ago. As such it would not call for any special notice in this magazine. But Prof. Grant has added so much new matter—nearly one hundred pages in all—that the volume is really a new work. The additions comprise, first, a supplementary chapter bringing the narrative up to date and describing the outbreak and early stages of the present war; secondly, a set of four valuable chapters on British history, dealing respectively with the sixteenth, seventeenth, eighteenth, and nineteenth centuries. These British chapters are intended (1) "to suggest certain points of view rather than to give a detailed narrative," and (2) "to institute a comparison between the development of England and that of other European countries." They greatly enhance the value of this admirable text-book, and in themselves deserve careful study by any who wish to get in but compass a scholarly survey of the modern history of their country.

*The Adventures of Edmund Ludlow.* Edited by T. A. Spalding. Two vols. xii+165 pp. and 114 pp. (Nelson.) 1s. 6d. and 2s. 6d.—These two small volumes consist, the one of text for scholars, the other of notes and illustrations for teachers. The text is made up from skilfully selected and co-ordinated extracts from Ludlow's "Memoirs," first published in 1608. It presents a continuous narrative of the stormy and adventurous career of the notorious republican and regicide, from the outbreak of the Civil War in 1642 until a date not far removed from that of his death in exile in 1651. It is full of interest and instruction, and, in the hands of a good teacher, it should prove to be an effective means to awaken interest in history and to impart sound knowledge of at least one aspect of the central episode of the seventeenth century in England. The teachers' handbook supplies all necessary explanation and adds much information concerning the general history of the period. The only doubtful questions raised by this interesting experiment in history teaching are, first, whether it is wise to concentrate so much of a pupil's thought on one aspect of one brief period in our nation's story, and, secondly, whether the moral and political lessons of Ludlow's career are those which it is desirable to inculcate.

*War Speeches, 1914-17.* Collected by B. W. Ginnburg. xxxii+194 pp. (Clarendon Press.) 2s. 6d. net.—Eighteen important speeches are gathered together within the covers of this volume. Thirteen are the utterances of British Ministers, home and Colonial; three are American, the remaining two are orations by Herr von Bethmann-Hollweg—one of them presented here for the first time in adequate fullness. Dr. Ginnburg contributes a "foreword" of twenty illuminating pages, in which he explains the principles which have guided him in the selection of the speeches, and emphasises the lessons which they teach. All the material here collected in neat and accessible form is of first-rate significance to all students of the causes and progress of the war.

*Handbook of Modern European History, A.D. 1789-*. By S. E. Maltby. 128 pp. (Headley.) 1s. 6d. or 2s. interleaved.—This is a useful little book of service for those who are studying the history of the period subsequent to the outbreak of the French Revolution. It contains a general survey of the period, a list of the leading treaties, with a statement of their provisions, tables of outstanding events in each of the chief States of the Continent, brief biographies of the most prominent men of the era, and a series of maps—the most original feature of the compilation—showing the progress of Western civilisation.

*Lasting Peace, etc.* By J. J. Rousseau. Edited, introduction, by C. E. Vaughan. 128 pp. (Constable) 2s. net.—Two years ago Prof. Vaughan (late of University) published through the Clarendon Press a fine and scholarly edition in two volumes of all the critical writings of Rousseau. Two of these writings, viz. an essay on "A Lasting Peace through the Union of Europe" and a fragment on "The State of War," struck him as so remarkably relevant to the present condition of international affairs that he has abridged them into excellent English and issued them in a pocket form with valuable introductions. Both Rousseau's prophetic utterances and Prof. Vaughan's interesting comments deserve the most serious consideration at the present time. Their cumulative effect is a solemn warning against the folly and danger of making peace with an undefeated and intact Central Power. As Rousseau was himself an idealogue, there is unusual force in his appeal to idealogues:—"My dear friend, you must allow me to tell you that you give much weight to your calculations, and too little to the heart of man and the play of passion. Your system is excellent for Utopia; for the children of man it is worth nothing."

*History. The Quarterly Journal of the Historical Association.* Vol. ii., No. 6. 64 pp. (Macmillan.) net.—This excellent number of *History* opens with a short but important and finely written letter from the President of the Board of Education on the subject of history in its various relations. Mr. Fisher well says that the historical method of treating a subject is the "scientific method," that "it is inconceivable that the study of any literature should be intelligently pursued unless it is surveyed in the context of history," and that "it is only by a diffusion of a sound knowledge of modern European history through the community that we can look for an improvement in the quality of judgments which we pass upon the complicated scenes of international affairs." The leading article is a clever discussion of the "Irish National Tradition" by Mrs. J. R. Green. The thesis which it maintains is that "one national force has overshadowed and dominated all others" in Ireland, namely, "the power of a great literary tradition." The article reveals much that political prejudice and that remoteness from reality which render the settlement of the Irish national question so difficult. "Some Problems of History in Girls' Secondary Schools" are forcibly presented by Miss M. A. Howard.

*Art, Crime, and Police in Mediaeval Britain.* By Mr. Jeudwine. xx+292 pp. (Williams and Norgate) 6s. net.—Mr. Jeudwine is an enthusiastic teacher in history. He approaches the subject with a freshness and freedom which have not been impaired by any preliminary training. He is therefore able to speak with severe disapproval and unconcealed contempt of "the English Parliamentary historian, who regards education in this country"—whoever this unscrupulous person may be. But although Mr. Jeudwine's work is marred by ignorance and by grave defects of

temper, and although it is chaotic in arrangement and written in execrable style, it embodies one leading idea which saves it from complete futility. Mr. Jeudwine—as he showed in his earlier volume on "The First Twelve Centuries of British Story"—has grasped the important truth that the history of the United Kingdom, as hitherto written, has suffered from the serious defect that the separate histories of England, Scotland, Wales, and Ireland have never been properly co-ordinated. Mr. Jeudwine is himself entirely incapable of effecting the co-ordination which he rightly perceives to be desirable, and the present book is a mere undigested mass of miscellaneous material. But it serves as a useful signpost pointing the way along which it is to be hoped that some more competent explorer may some day walk.

*The Old Empire and the New.* By A. P. Newton. xii+140 pp. (Dent.) 2s. 6d. net.—This volume is the first of an "Imperial Studies Series," of which Dr. Newton, lecturer on Colonial history in the University of London, is general editor. It comprises six Rhodes lectures delivered in the spring of the present year at University College. These lectures form an admirable introduction to the series, for they deal in broad principles and they take wide historical views, whereas the subsequent volumes are intended to treat rather of particular problems, e.g. "The Staple Trades of the Empire" and "The Exploitation of Plants" found within the Empire.

The general theme of the lectures is the continuity of Imperial history. Dr. Newton well shows that, although there was an apparent breach between the Old Empire, which was disrupted in 1783, and the New Empire, which developed in the subsequent period, there was as a matter of fact an unbroken process of growth and a uniform tradition. Dr. Newton has no difficulty in proving his thesis in respect of many departments of his subject, e.g. Imperial administration and Imperial defence. He has, however, to strain the meaning of continuity almost to breaking point in his efforts to prove any sort of connection between such antagonistic policies as those of Mercantilism and Free Trade. He has to postulate what he calls "a kind of negative continuity whereby early precedents that have produced notably evil results are changed for a diametrically opposite course." If this is continuity, a critic might ask, What is discontinuity? But, even though Dr. Newton does not always command assent as to his main contention, he never fails to illuminate and inform the reader. For he obviously writes from a marvellous fullness of knowledge. His lectures on sea-power and on fiscal policy, for example, are admirable and invaluable historical summaries. We trust that, in the interests of the Empire, this masterly little volume may have a wide circulation.

#### Geography.

*Macmillan's Geographical Exercise Books. Key to Book V., Asia and Australasia.* By B. C. Wallis. (Macmillan.) 2s. 6d. net.—As in the case of other books in this well-known series, the following features make the solutions particularly useful:—(a) The assistance which they give to teachers when marking their pupils' work; (b) the key maps, which show clearly how the work should be entered on outline maps of the various regions; (c) the information supplied in the text, from which a full answer could be written; (d) the explanatory notes, which indicate the points to be emphasised by the teacher when discussing the various exercises.

*Cambridge County Geographies: Bedfordshire.* By C. Gore Chambers. 100+x pp. Maps, diagrams, and illustrations (Cambridge University Press.) 1s. 6d.

net.—Bedfordshire is interesting linguistically as a part of the area where modern English speech arose; it is predominantly agricultural, with crops and grass over five-sixths of the county, in the proportion of three to two. In cereals the yields are below the English average, despite the interest in farming shown by the Dukes of Bedford. As a compensation the county is notable for its market gardens, and contains nearly a quarter of the whole onion area of Great Britain. Mr. Chambers's chapter on lace-making and straw-plaiting is of surpassing interest, and his book as a whole finds a worthy place in this well-known series.

### Mathematics.

*Mathematical Analysis.* Vol. ii., part ii. *Differential Equations.* By E. Goursat. viii+300 pp. (Ginn.) 11s. 6d. net.—Profs. Hedrick and Dunkel are rendering a great service to American and British students by the publication of this translation of Goursat's treatise. We believe that this part of vol. ii. will appeal to British readers even more than the first part, for while there are several excellent English works dealing with the theory of functions, there is decidedly room for a book such as the present, which provides within moderate compass an introduction to the theory of differential equations. Passing over the first chapter, which explains elementary methods of integration, we find in the second an account of various investigations for the purpose of establishing the existence of the integrals of a system of equations. This chapter is divided into four sections, dealing respectively with Cauchy's calculus of limits and the use of dominant functions, successive approximations, first integrals, and Lie's theory of infinitesimal transformations. Here one regrets that the author has not found room for a larger number of examples illustrating the application of the theory to particular equations. In the third chapter the properties of systems of linear equations are studied, and in the fourth those of certain types of non-linear equations. In the final chapter the properties of partial differential equations are investigated, attention being directed almost exclusively to those of the first order, while a discussion of the more difficult problems connected with these equations and those of higher order is reserved for the next volume. The translation is in every respect excellent, and we trust it will enable students in this country to become familiar with certain branches of mathematical theory to which, for various reasons, access has hitherto been not altogether easy.

### Science and Technology.

*Housecraft Science.* By E. D. Griffiths. vii+183 pp. (Methuen.) 2s. 6d. net.—Had we examined this book without having seen its title, we should have taken it to be another volume on elementary physics, with rather more examples perhaps from everyday life than usual. Even then grave doubts would have arisen as to whether the science of light could be dealt with usefully in twenty pages, magnetism in four and a half pages, and electricity in six pages. In other words, science mistresses looking for a text-book to put in the hands of girls studying with them the facts and principles of science upon which the successful practice of domestic economy depends will scarcely find this to be the guide they seek. Housecraft is more comprehensive than Mr. Griffiths appears to suppose; and intelligently to govern a home, its mistress must know something at least of chemistry and sanitary science, though she could dispense with a knowledge of the mensuration of the cone and sphere or of ice-flow in glaciers, which are among the subjects included in this book. As a course in preliminary

physics, however, the chapters on mechanics, mechanics, and heat have many qualities to commend them to teachers.

*The Munition Workers' Handbook.* By Ernest Second edition. 158 pp. (pocket size). (Crosby London). 2s. 6d. net.—The object of this book, as are told in the preface, is to provide in as small space as possible all the practical information a man taking up munition work would be required to know. On examining the contents, we find that the object has been attained, and that the author has succeeded in presenting a large amount of information couched in simple language and in a form readily to be understood by one having no previous knowledge of engineering. The subjects treated include work-arithmetic, mensuration, geometry, the composition and mode of manufacture, and strength of iron, steel, and other common materials, workshop tools, such as calipers, scribing blocks, etc., micrometers and other measuring appliances (this section is particularly full and useful). Then follow sections dealing with work, drilling, tapping, and screwing, metal work, planing and shaping, shell turning, machine tools, and gear cutting. In view of the excellence of the contents, we are not surprised that the book has met the needs of many workers at the present time, and that the first large edition sold rapidly.

*Experimental Building Science.* By J. Leask Macmillan. (Cambridge University Press.) 6s. net.—Following the recently issued memorandum of the Board of Education on the "Teaching of Building," this book has been published at a very appropriate time and should prove of assistance to both teachers and students. The difficulty most lecturers experience in presenting this subject to a class is the lack on the part of the student of previous training in science, and it is still a matter of opinion as to whether it is desirable to precede such specialised training by a short course of general elementary science. This difficulty exists particularly when dealing with the chemistry of building materials, and the author apparently realises this in chap. xv., which presumably is intended to prepare the way for the next volume. We imagine that the students for whom the book is intended should be taught by a teacher who has had some scientific training in addition to his technical experience. Without this, the lot of the building student is not to be envied, and more harm than good may possibly result. We suggest that the experiments on voids and the grading of building materials would give results more in accordance with those obtained in actual practice if larger vessels were used. In the section treating the porosity of stone it might have been desirable to make some reference to the common preservatives in use. The sources of error in statitical experiments should have been definitely stated and the students taught to expect small differences between experimental and calculated results, and asked to give reasons for such discrepancies. Especially is this necessary in experiments of the type of Nos. 52 and 53. The author's arrangement of the course is good and uniformly progressive, the subject-matter is clear and well illustrated, and he is to be congratulated on presenting his work in a very satisfactory manner.

*A Short System of Qualitative Analysis.* By R. Caven. 162 pp. (Blackie.) 2s.—This book is an abridgment of Dr. Caven's "Systematic Qualitative Analysis," which owed its being to an attempt to build the art of analysis on a truly scientific foundation. It has always seemed remarkable to the present reviewer that the study of qualitative analysis—slightingly referred to as "test-tubing" by its detractors

is been so largely superseded by what, under equally skilled teachers, is merely shoddy quantitative work. himself, in his own experience, has found that the intelligent student is far more appreciative and keen at problems of analysis than on a succession of mechanical operations involving endless weighings and measurements. If qualitative analysis were more often combined with the excellent "observation tests" which have been such a feature of Oxford Local examinations during the past ten years, there can no doubt that a far more real knowledge of chemistry would result. Such a book as Dr. Caven's *Les to the teacher all the necessary material with which to work.*

### Pedagogy.

*The Organisation of Thought, Educational and Scientific.* By Prof. A. N. Whitehead. 228 pp. (Williams and Norgate.) 6s. net.—The essay which gives its title to the collection is one of eight addresses which, although delivered in diverse circumstances and to different classes of auditors, are linked together by a common line of reflection. The first six addresses are concerned with various aspects of educational reform, and their publication at the present moment cannot be regarded as other than most opportune. Under the stress of the world conflict, the influence of the great mass of the nation to educational questions has to some extent been disturbed, and there is an awakening consciousness that our failures are largely due to lack of knowledge, and teachers or others on educational matters are listened to with greater attention and sympathy. Prof. Whitehead is instructive rather than critical. The errors of the past have so patently punished themselves that to enter upon them is not so urgent a duty as to explore better paths. The first essay may be regarded as fundamental, and is intended to provide an answer to the question: What is the aim of education? Holding that the one subject-matter of education is life in all its manifestations, and that education is the acquisition of the art of the utilisation of knowledge, Prof. Whitehead brings to the discussion of the question a width of vision and a breadth of knowledge and sympathy which prove him to be thoroughly imbued with that culture which he considers it is one of the chief aims of education to impart, embracing activity of thought combined with receptiveness to beauty and humane feeling. The three last essays deal with certain points arising in the philosophy of science, namely, the logical basis of science and the nature of certain fundamental ideas, such as fact, object, time and space, fields of force and relativity. It need scarcely be said that, although these will appeal to a more limited circle of readers than the earlier essays, those who bestow upon them the careful study which they demand will find themselves amply repaid for their pains.

### Miscellaneous.

*This is the End.* By Stella Benson. 245 pp. (Macmillan.) 5s.—Miss Benson leapt into fame with "I See," which was welcomed as an astonishing performance for a new writer. The present volume is called a story, but the story is of the slightest. A bus conductor—of course a girl—is apparently trying to find herself; indeed, for that purpose she has run away from what may be described as a no-home. It is the search for this girl and the hinted love of brother and sister that provide a plot. To this plot there are added interludes, one being very beautiful, and Jay's double personality and Miss Benson's excellent verse make up the whole. Probably the Invisible Playmate and Mr. Algernon Blackwood generally will be felt by the reader, but the refined cynicism and the

vulgar drop to life from the dream-houses of the sea belong to the writer alone. Kew, Jay's brother, is the only person who condescends to be alive; the rest belong to caricature or spirit worlds. Yet he is alive, and therefore Miss Benson kills him. Of course, the book is bewilderingly clever, like youth at the present day; but even youth has to become, like Mr. Russell, older and wiser. Odysseus of old was better satisfied than our author:—

"He grounded on the common beach  
And trod the little towns of men."

*One Hundred Singing Games.* Old, new, and adapted. Edited by Frank Kidson and Alfred Moffat. 115 pp. (Bayley and Ferguson.) 1s. net.—This collection will serve a useful purpose wherever children are gathered together, whether it be in school, at fêtes, parties, or for merry hours at home, for which it provides an almost inexhaustible store of good things. Ring games, action songs, singing dances of all kinds are there, the traditional old and some variants of modern invention, musical chairs, for example, appearing in a new guise in the sudden departures of the train in "The Railway Station." Some may be new to English children, for the child-world of many countries has been laid under contribution for the collection: France, Holland, Germany, Bohemia, and Italy appear, as well as all corners of the British Isles. The familiar tunes and the new songs have been given pleasant, easy accompaniments by Mr. Moffat, and the editor has provided for the children clear directions of the actions of the games, as well as occasional footnotes with regard to origin and old association, that will interest the parents, organisers, and teachers, and give new zest to their attempts to pass on the age-long traditions of singing games. Mr. Kidson has provided also for the grown-ups plausible suggestions for several mysteries—for instance, the puzzling unseasonableness of gathering nuts "in May"—showing such to be due to long-accepted error and no part of the general unreason and happy foolishness of the world of play. A propos of the Continental source of some of the singing games, will not the editors, in the further editions into which it is to be hoped this cheap book will run, gather some for us from the rich stores of Russian folklore?

## EDUCATIONAL BOOKS PUBLISHED DURING AUGUST, 1917.

(Compiled from information provided by the publishers.)

### Modern Languages.

Mérimée: "Colomba." Edited, with Notes and Vocabulary, by Y. Laffitte. 218 pp. (Hachette.) 1s. 6d.

"Spanish Grammar Self-Taught." By Andrés J. R. V. García. 144 pp. (Marlborough.) Wrapper, 1s. 3d. net; cloth, 2s. net.

"Key to Spanish Grammar Self-Taught." By Andrés J. R. V. García. 32 pp. (Marlborough.) Wrapper, 7d.

"Spanish Self-Taught and Grammar, with Key." By Andrés J. R. V. García. 326 pp. (Marlborough.) Cloth, 4s. net; banded in wrapper, 3s. net.

"Dictionary of Commercial Correspondence in Seven Languages (English, French, German, Spanish, Italian, Portuguese, and Russian)." 718 pp. (Pitman.) 7s. 6d. net.

"Graduated French-English Commercial Correspondence." By Maurice Denève. 160 pp. (Pitman.) 2s. net.

"Lessons in Spanish Commercial Correspondence." By G. R. Macdonald. 108 pp. (Pitman.) 1s. 6d. net.

**English: Grammar, Composition, Literature.**

Lamb: "Tales from Shakespeare." First Series. Edited by A. R. Weekes. xx+128 pp. (Clive.) 1s. 4d.  
 "Advanced English Composition." By Michael West, Indian Education Service. With diagrams. (Longmans.) 3s.

Longfellow: "Tales of a Wayside Inn." Edited, with Introduction and Notes, by J. H. Castleman. xxviii+224 pp. (Macmillan.) 1s. 3d. net.

**History.**

"The Adventures of Edmund Ludlow." Told mainly by himself, and arranged by Thomas Alfred Spalding. (Nelson.) 1s. 6d.; Teachers' Edition, with Notes and Illustrations, 2s. 6d.

**Geography.**

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**Mathematics.**

"A First Course in Higher Algebra." By Dr. Helen A. Merrill and Dr. Clara E. Smith. xiv+248 pp. (Macmillan.) 6s. 6d. net.

**Science and Technology.**

"Elements of Coal Mining." By Prof. Daniel Burns. 244 pp. (Edward Arnold.) 3s. 6d. net.

"Technical Handbook of Oils, Fats, and Waxes." Vol. i., "Chemical and General." By P. J. Fryer and F. E. Weston. (Cambridge Technical Series.) x+280 pp. (Cambridge University Press.) 9s. net.

"Elements of Industrial Chemistry." By Allen Rogers. 513+viii pp. (Constable.) 12s. 6d. net.

**Pedagogy.**

"Education: Selective, Specific, Compensatory." By Michael West, Indian Education Service. With a Foreword by the Hon. W. W. Hornell, Director of Public Instruction, Bengal. (Longmans.) 3s. 6d.

**Art.**

"A Plea for a Wider Use of Artists and Craftsmen." By William Rothenstein. 28 pp. (Constable.) Paper, 1s. net; cloth, 2s. net.

**Miscellaneous.**

"Some Children I have Known." By A. K. Pritchard. 128 pp. (Harrap.) 2s. 6d. net.

"Babes of the Wild." By Lilian Gask. 160 pp. (Harrap.) 2s. 6d. net.

"Knock Three Times." By Marion St. John Webb. 320 pp. (Harrap.) 5s. net.

"The Enchanted Lochan." By F. C. Brunton. 200 pp. (Harrap.) 3s. 6d. net.

"The Story of the Canterbury Pilgrims." By J. W. McSpadden. 224 pp. (Harrap.) 5s. net.

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"Rhymes and Rhythms for Little Ones." With music. Arranged by Adelaide Grabham. 18 pp. (Nelson.) 2s. 6d.

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Year Book Press Series of Unison and Part Songs for Schools:—No. 141, "Jack and Joan." By Dr. Charles Wood. 4 pp. 2d. No. 142, "Sweet Suffolk Owl." By Sydney Marston. 4 pp. 2d. No. 143, "Sailor Song." By Sir Chas. Stanford. 8 pp. 3d. (Year Book Press.)

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**New Modern Languages.**

The article on "New Modern Languages" in your September number is both interesting and well-timed, but the note of warning sounded by Mr. Peers should not go unheeded. Some headmasters have acted with almost indecent haste in their inclusion of the study of new languages in the curriculum without considering deeply enough the objects to be served by these studies. The inclusion, too, of any study in our curricula must depend upon an adequate supply of good, well-trained teachers, as well as an ultimate utilitarian aim, at a hasty adoption of a new language under a teacher whose knowledge, either of English or of the foreign language, is not good cannot but have a bad effect on the future study of the language in our schools. The ground must be cleared before we sow the seed, and the sower must be a skilled workman—amateur can do naught but harm to the harvest. Even now some schools have been badly served by the hasty inclusion of extraneous studies. We must be careful, too, about the overloading of our time-tables. The Plimsoll line is almost invisible as it is, and if we are to take fresh cargo aboard, what are we going to jettison—French and English? In the craze for fresh studies we cannot afford to ignore French and to allow our desire of either Spanish or Russian to oust this study from its proper place. English, too, hitherto the Cinderella, must be allowed to take its rightful place as the chief language in the curriculum, and more time and space must be devoted to it. By all means let us have new languages, but do not let us ignore the old.

E. ALEC WOOLFE.

London, September 17th.

**The School World.**

A Monthly Magazine of Educational Work and Progress.

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# The School World

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SIXPENCE.

## HOW TO WRITE WITH THE LEFT HAND.

By P. B. BALLARD, M.A., D.Lit.

### I.—THE MOVEMENTS INVOLVED.

HERE is only one type of manual performance which places the left-handed at a palpable and serious disadvantage, and that is handwriting. Artists have attained eminence in their profession who have drawn and painted with the left hand, from Leonardo da Vinci to George Clausen. But professional writers have never used the left hand in the exercise of their craft; at least I know of no evidence that they have. Among the many manuscripts that have come down to us from the days when writing was a vocation—the days before the invention of printing—there is, so far as I am aware, not a single script that was demonstrably the work of a left-handed scribe. And it is difficult to see how, with the broad-nibbed pen then in use, sinistrality could escape detection. Many a schoolboy congenitally left-handed has acquired with his right hand exclusively the art of writing, but has continued to draw with his left hand, and his left hand only. It is felt, both by teachers and scholars, that in drawing it does not matter which hand is used, but in writing it does. The truth is that the script characters themselves, the way they slope, the direction in which they are written, the distribution of thick and thin lines, and particularly the lines that link the letters, have all been devised and developed to suit the peculiar needs of the right hand. They accord with those lines of easiest movement by the right hand which are often the lines of most difficult movement by the left. Indeed, to acquire with the left hand the art of writing modern script, if we consider the question apart from the native dexterity of either hand, is a much more difficult task than to acquire it with the right. And yet it is desirable, as I have elsewhere tried to show,<sup>1</sup>

that left-handed children, especially if the sinistral tendency is very pronounced, should be encouraged to write with the left hand exclusively. The proportion of left-handed children is, however, so small, amounting as a rule to no more than three in every hundred, that schoolmasters have never considered it worth while to provide for their needs. The policy generally adopted is either *laissez faire* or an ill-advised restraint. The left-handed boy is too often compelled to use his right hand, contrary to the promptings of nature; but whether he uses his right hand or his left, he is expected to adopt the same style of writing as the rest of the class, and to acquire it as the others do.

The need for studying the question of writing with the left hand is painfully brought home to us at the present time by the number of cases of young fellows who in fighting for their country have lost the use of the right hand. It seems, too, if one may judge from the limited field of personal observation, that writer's cramp and neuritis in the right arm are becoming more and more prevalent. To all these the acquisition of the art of writing with the left hand is a pressing problem—a problem which these articles will, it is hoped, help in some measure to solve.

Let us begin by studying the degree of facility with which certain simple and fundamental movements are executed with either hand. If the conclusions arrived at fail to convince the reader, he can easily confirm or refute them by repeating the experiments and enlarging their scope.

Place on a piece of paper two points, A and B (Fig. 1), which may be any distance apart, but must be so related that the straight line joining them will be parallel to the bottom of the paper—a line which I shall distinguish by the term "horizontal." Ask the subject to take a pen or pencil in his right hand and join the two points by a straight line. Let him repeat the experiment with the left hand. It will be found that almost invariably he will

<sup>1</sup> See THE SCHOOL WORLD, December, 1916, p. 441.

draw with the right hand in the direction AB, and with the left in the direction BA. And this is true however far the points are apart, in whatever relation to the body the paper is placed (provided, of course, that AB is kept fairly horizontal), whatever instrument is used (whether pen, pencil, or chalk), and whatever the natural handedness of the subject (whether right or left). It is true whether he writes on a flat surface with his arm resting on it, or whether he draws on a blackboard with his arm free to move in any direction. Finally, it is true whether he has learnt to write or not.

Stated generally, the rule is that for each hand the easier horizontal movement is the outward movement—for the right hand to the right, and for the left hand to the left. The bearing of this fact upon the art of writing is significant; for the broad movement of the hand across the page is from left to right—a direction that is easy for the right hand, but

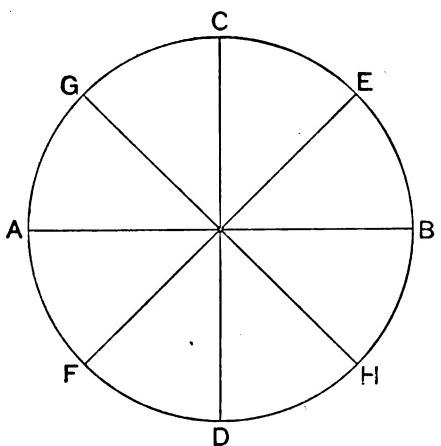


FIG. 1.

fraught with difficulty for the left. Whether the mechanism of hand and arm—the osseous and muscular systems involved—is in itself better adapted for outward than for inward horizontal movement is a disputable question. As a rule, there seems to be but little difference in the facility with which exactly opposite movements are performed. Between to and fro, up and down, backwards and forwards, there would apparently be no difference in facility were not the case complicated by the angle at which the tool is used; for this brings in a new factor, the degree of friction between tool and paper.

If the pencil were held at right angles to the paper—as it never is—the amount of friction would be the same in whatever direction the point moved along the surface. But it is always held at an angle (the hand could not comfortably hold it otherwise), and a movement towards the side of the acute angle in-

volves less friction than a movement toward the side of the obtuse angle. The former is of the nature of a pull, while the latter is a push; and a pull is found to be easier than a push, and as a matter of fact, always preferred. Even our analysis is not complete; for in the case of a pen, unless it happens to be a stylograph pen, the point is not, as in the case of a lead pencil, indifferent to direction. When moving in the direction of the concave side of the nib, the points yield to pressure much more readily than while moving in the opposite direction. The friction, in fact, is less. In using the pen, the advantage of the pull over the push is thus seen to be due to two causes—the angle which the pen makes with the paper, and the peculiar formation of the nib. And these two causes happen to co-operate, for the pull occurs in the direction of the acute angle, which is also the direction of the hollow of the nib. It is everybody's experience that a scratchy pen scratches during a push only, never during a pull.

During the act of writing, the pen, which is easily and naturally held, slopes in the direction GH, and a horizontal movement toward the right would be of the nature of a pull, while a movement towards the left would be a push. Held in the left hand, on the contrary, the pen slopes in the direction EF, and the movement towards the right is a pushing movement. Thus we reach the important and dominating fact that in writing modern script most of the separate acts are pulls, which are easy; but in writing it with the left hand they are pushes, which are difficult.

Let us now consider the vertical movements CD and DC. Experiment shows that children prefer the down-stroke CD, although the preference is not so marked as the preference for the outward horizontal movement. As one would naturally expect, handedness makes no difference here; both right-handed and left-handed subjects prefer the downward movement. I was puzzled at first by the fact that when they were tested for rapidity by being required to make as many down-strokes as they could in a given time, say thirty seconds, and then as many up-strokes as they could, the number of up-strokes was generally the greater, although the subjects were emphatic in their assertion that they found the down-stroke easier. The reason for this discrepancy soon however, became apparent. The down-stroke, being thicker, took more ink, and delay was caused by the frequent dipping of the pen into the inkpot. When a fountain-pen was used the down-strokes were the more numerous. In these vertical movements we again find the advantage of the pull over the push.

In dealing with the oblique movements need not recount in detail all the evidence upon

ich my conclusions are based. They are  
nded on experiments with children and  
ts—experiments which aimed at discover-  
ng the degree of ease, skill, and rapidity with  
ich each particular movement could be exe-  
ed. All the results tend unmistakably to  
ow that the line EF—FE represents a to-  
and-fro movement which is the easiest of all  
the right hand to carry out, and the line  
I—HG a to-and-fro movement which pre-  
nts the greatest difficulty of all. For the left  
hand this is reversed. What is easy for the  
right is difficult for the other, and *vice versa*.  
This accounts for the fact that right-hand script  
tends to slope forwards and left-hand script  
backwards; and for the fact that when a right-  
handed draughtsman shades his drawing by  
lines which do not by their direction represent  
out the predominant trend of the lines  
along the diagonal which passes from the  
left-hand corner of the paper to the  
right-hand corner, while the left-handed  
draughtsman tends to shade in the direction of  
the other diagonal.

The reason for this preference is not far to seek. It rests in the system of levers and linkments which make up the anatomy of hand and arm—a system which, complex as it is and involving so many delicate co-ordinations of muscles as to defy complete analysis, yet be broadly considered as giving rise to four distinct series of circular movements in the several centres of the rotating radii—the shoulder, elbow, wrist, and knuckles. When writing is done with a free arm, as pens when a blackboard is used, many of these movements radiate from the shoulder; when one writes with a pen on a flat surface the only movement that comes from the shoulder is that concerned in the occasional lifting of the elbow parallel to the direction in which the pen moves across the page. Most of the movements rotate round the elbow, the wrist, and the knuckles. If the paper be kept straight and in front of the body, and an attempt be made to draw lines with the elbow fixed and the wrist and fingers rigid—that is, using the fore-arm from elbow to the point of the pen as a rotating lever—it will be found that oblique lines are the only possible ones. The same thing happens if the movement starts from the shoulder: we again find the same compulsion to the same obliquity. These two rotary movements enter largely into the complex act of writing, the movement from the elbow mainly determining the alignment across the page, and the movement from the wrist the slope of the writing. We get the full benefit of the horizontal movement from the elbow when the paper is so placed that the fore-arm and the

length of the paper are in a continuous line. That is the reason why right-handed writers tend to tilt the paper with the bottom towards the right, and left-handed writers to tilt it with the bottom towards the left.

The circular character of the larger movements can easily be demonstrated by getting a blind-folded boy to write straight across a large piece of paper. The result is not a straight line, but a curve which tends at the beginning to rise towards the top of the page, and at the end to fall towards the bottom. It is, in fact, a cycloid formed by using the elbow as a travelling centre.

The question of friction does not seriously affect the relative facility with which the up-and down-strokes are made in the easy oblique directions (EF and FE for the right hand, and GH and HG for the left), for some writers so hold the pen that the angles it makes with the paper are the same in each direction. For most writers, however, the down oblique is a pull and the up oblique a push. Accordingly, the easiest way for the pen in the right hand to move is from E to F, and for the pen in the left hand from G to H.

The other set of obliques—the difficult obliques—afford a marked contrast. No tangential force from the wrist or elbow is of any service: the work has to be done either by a swing from the shoulder or by the flexing and extending of the fingers. And the downward oblique is always a definite pull, and the upward oblique a clear push. The movement, therefore, that presents the greatest difficulty to the right hand is represented by the line HG, and to the left hand by the line FE.

If the reader will now examine the model script in an ordinary school copybook, or the style of writing in almost universal vogue at the present day, he will find the right-handed bias meeting him at every step; he will find the predominating lines—the most frequent strokes of the pen—all lying in the direction that is easiest for the right hand, but most difficult for the left. We arrive at the conclusion that the left-handed writer has three great obstacles to contend with: the general movement across the page from left to right, the slope of the letters to the right, and the prevailing trend of the lines that join letter with letter. Of these three obstacles the first only is insuperable, and the first is the least serious.

So far I have made but little reference to the rôle taken up by the fingers in the complicated act of writing. It is possible to write tolerably well without using the fingers at all except for holding the pen—a fact illustrated in Fig. 2, which is part of a letter written a few years ago by an American who called himself a professional penman and taught a system of

writing which involved the use of the arm only. He himself wrote with the fingers held rigid and the muscular part of the forearm resting lightly on the desk. No part of his hand or wrist touched the paper. I do not like this style of writing, nor do I advocate its adoption in any circumstances. To me, at any rate, it lacks character and dignity and is entirely devoid of charm. But it shows what may be done without using the fingers. Writing with chalk upon the blackboard limits the mechanism in the same way.

What, then, is the function of the fingers? Of all the muscles involved in the act of writing, those controlling the fingers are the most delicate, the last to develop, the first to fail, the most liable to be affected by writer's cramp, and (here I am trenching on debatable ground) they are those in which the natural handedness of the subject is most clearly manifested. I hold, in fact, that a left-handed man is more markedly and definitely left-fingered than left-armed, and the right-handed man is more awkward with his left fingers than his left arm. In the case of the ordinary writer whose style is matured the

Cambridge examining bodies (Joint Board Oxford Delegacy, Cambridge Syndicate), the Northern Universities Joint Matriculation Board, and one each the Universities of Bristol, Durham, and London. This arrangement gives Oxford and Cambridge an advantage, increased by the appointment of experts (Mr. Matheson, Mr. Gerrans, and Mr. Flatman). The Northern Universities have appointed Sir Alfred Dale, Prof. Connal, and Mr. Burstall, which seems an excellent choice. How far the representatives of the other universities (Sir Isambard Owen, Dr. Hadow, Walmsley) can be regarded as experts is doubtful. Part ii. was to consist of two members representing the County Councils Association, and two the Municipal Corporations Association—these have been appointed. The Teachers' Registration Council was to have four members, and one more (making nine in all in Part ii.) was to represent a proposed "standing committee of professional bodies." This last has not materialised, which is regrettable, but perhaps not surprising. The Teachers' Registration Council has now been allotted five members, and has

*I beg to extend to you a hearty invitation  
to hear me lecture to teachers on Free-Arm  
Writing on Wednesday, 9th February, at 4-45 p.m.*

FIG. 2.—Specimen of free-arm writing.

finger muscles correct and supplement the larger movements from the wrist and elbow, they convert the large circular movements into rectilinear movements, they perform most of the smaller movements involved, and they give to the script much of its peculiar personal characteristics. In fact, for really beautiful writing skilful finger-work seems indispensable; but it is the final flower of good penmanship, not its initial stage.

*(To be continued.)*

#### THE SECONDARY-SCHOOL EXAMINATIONS COUNCIL.

"THE council entered on its duties on September 12th." It is actually at work, and we may well take this early opportunity of considering its constitution and the prospects of its carrying out its duties efficiently.

The council was divided according to Circular 996 of the Board of Education into two parts. Part i. was to consist of nine members, three representing the three Oxford and

pointed Mr. Abbott (head of the mathematics department, Regent Street Polytechnic), Miss Gadesden (headmistress of the Bedheath High School), Miss Lees (Clapton High School), Mr. Sharples (headmaster of the Waterloo Road School, Manchester), Mr. Somerville (Eton College). The Association of Education Committees is represented on the council by the Rev. Canon J. J. Scott.

Of the eighteen members who have been appointed three are women, which is a rather higher proportion than in some important committees recently constituted, but still quite inadequate. It is simply ridiculous to keep closing our eyes to the fact that half the pupils in our schools are girls. It is further to be noted that the schools represented by the ladies are all much of the same type. The boys' secondary schools represented are Regent Street Polytechnic and Eton College. The chairman of the council (appointed by the Board of Education), the Rev. William Temple, was for a few years headmaster of Repton School. There is one headmaster of an elementary school. There are three vice-

ancellors of universities, one chairman of a university board, one university professor, two men of education committees, and two factors of education.

The chairman and four members of the council are resident in London; four others are within the 100-mile radius; more than half the council are outside it.

This last is rather an important consideration, as the council has much urgent business to transact, and this necessitates frequent meetings. A record of the attendances of its members would form an interesting appendix to the annual report of its activities that is promised.

"The main functions of this council" (to quote Circular 996) "will be of a technical character requiring considerable experience of practical working of examinations and of conditions which must be fulfilled if the certificates of approved examining bodies are to be generally accepted as evidence of the attainment of an adequate standard of general advanced secondary education. . . . The council will deal with the following matters:

- (a) The maintenance by each approved examining body of an adequate standard both a pass in the examination and for a pass in credit;

(b) Investigation of complaints made by local authorities with regard to examinations;

(c) Promotion of conferences with examining bodies and others as occasion arises;

(d) The form and content of the certificates issued on the result of the examinations;

(e) Negotiations with universities and professional bodies for the acceptance of the examination certificates as exempting the holders from certain other examinations."

We may well wonder whether the council constituted is well adapted for all the above purposes. Items (c), (d), and (e) can reasonably be managed by such a body, but even these, and essentially for (a) and (b), it requires an expert committee that has "considerable experience of the practical working of examinations." A few only of the present members of the council are fitted to serve on such a committee. In previous comments on the prospective work of the council we have dwelt on the highly technical character of the work of "moderating" school examinations, especially in modern conditions, when many subjects are based on the curriculum of individual schools. If the council is to establish a standard of difficulty in any subject, so as to compare the examination tests in that subject provided by different examining bodies, it requires a body of experts, and that body could transact its business in monthly, or even

weekly, meetings, but would have to consist of permanent officials, as anyone knows who is acquainted with the work involved in moderating for a single examining body.

The Board of Education may get over this difficulty by supplementing the council by means of its own inspectors; but these are, as a rule, inexperienced in the practical working of secondary-school examinations. The Board, we believe, has no officials with this highly technical knowledge. Indeed, the more one knows from within about the way in which examinations are conducted, the more one feels the need for scientific method and investigation and realises how very limited is the number of experts.

Some school subjects are adequately represented on the council, others quite inadequately, some not at all. Professional and commercial interests, too, should have fuller representation. With all respect for the eminence of its individual members, the council gives one the impression of being rather a nondescript body; and one awaits with wonder, not unmixed with anxiety, the outcome of its work.

Will it be effective? After all, it is essentially a consultative body, and the Board of Education has taken good care that it shall not take any important action on its own account. "The Board of Education will be represented at the council meetings by such of its officers as the nature of the work may require. These officers will attend as assessors, with the right to speak but not to vote. . . . [The council] will consult the Board before committing itself on questions of principle or policy which are controversial or specially important. Officers of the Board who attend meetings of the council as assessors may request the council to refer any such question to the Board."

Can one blame the Board? It pays the piper and it calls the tune. "Bureaucratic control," if you like; but what alternative is there? If organisation is to take the place of muddle, if the important work of examining is to be rendered efficient, there must be somebody to direct affairs. We can only hope that the Board will use its powers wisely.

That there is need for co-ordination is obvious enough. Look, for instance, at the provision that examining bodies are making for the "advanced courses." They are "to be planned so as to lead up to attainment of the standard required for entering an honours course at a university," according to the Board's latest Regulations for Secondary Schools.

We have before us the new Regulations for the Higher School Examinations of the

Universities of Oxford, Cambridge, and London; let us compare them.

The Board of Education defines the classical section as "the Latin and Greek languages, literature, and history." The requirements are at—

*Oxford:* Latin and Greek prose composition and unseen translation, prepared authors (one prose and one verse in each language), Greek and Roman history (outlines of c. 150 years), and [*optional*] Latin and Greek grammar and literature.

*Cambridge:* Latin and Greek prose composition and unseen translation, prepared authors (one prose and one verse in each language), Greek and Roman history (outlines of c. 150 years), Latin and Greek grammar and literature.

*London:* Latin and Greek prose composition and unseen translation, prepared authors (as submitted by school and approved by University), critical questions on language, questions on literature and Greek and Roman history (outlines of c. 350 years).

The Board of Education defines "Modern Studies" as "two languages other than English, of which Latin may be one, with their literature, and modern history, including the history of England and Greater Britain." (We say nothing further here about this definition; we are in general agreement with the criticisms made by Mr. Ripman in the August number of *THE SCHOOL WORLD*.) The requirements are at—

*Oxford:* English composition and two modern foreign languages (English, French, German, and Italian); or one modern foreign language and four papers selected from three English and three history sections; or English and history and unprepared translation from one modern foreign language. (Books in languages prescribed by University.)

*Cambridge:* Two of the languages Latin, French, and German; or one of these with English literature, or with history, or with two papers on English literature and one on English history; or English literature and history. (Books in languages prescribed by University.)

*London:* At least three of the following subjects, two of which must be languages: English, French, German, modern history. (Books in languages as submitted by school and approved by University.)

Even a cursory glance shows some very noticeable differences. In the classical section the Oxford scheme is distinctly lighter than the others; in the modern section London is the heaviest and the least elastic. It is, indeed, difficult to see how the study of three main subjects can be expected. The aggre-

gate time during which a candidate taking Group B is examined is: Oxford, sixteen hours; Cambridge, fourteen hours; London, twenty-one hours, apart from oral examinations.

London is equally ambitious in its demands in the science group. While Oxford and Cambridge each require two sciences to be offered, London insists on three. Aggregate time of examination in this group, apart from practical examination: Oxford, six hours; Cambridge, twelve hours; London, eight hours.

There is a tradition in London University by no means discreditable, that its examinations should be more difficult than similar examinations of other universities; this time London has manifestly gone too far, and its demands are unreasonably severe. If there is to be an effective move towards interchangeability of certificates, such extreme differences of standard must be considered and removed; and in view of the growing importance of the advanced courses and of the London school examinations, one of the earliest tasks of the Examinations Council should be to render the requirements for the London Higher Examination more reasonable.

In school examinations there is no obvious advantage, and there are very real disadvantages, in marked variations of standard in examinations of the various universities. Approximate uniformity of standard is not compatible with differences in detail. To ensure uniformity requires not only expert knowledge, but also considerable tact in negotiating; and we conclude by expressing the wish that the Secondary-School Examinations Council may prove, by wise and well-considered action, that it possesses both in ample measure.

#### BOOKS ON THE METHOD, PHILOSOPHY, AND HISTORY OF SCIENCE

By Prof. R. A. GREGORY.

THE outstanding characteristic of the views upon science teaching now held by many responsible advocates is that of humanising influence. It is widely felt that concentration upon precise laboratory methods by which instruction easily becomes liturgical often stifles interest in science instead of increasing the spark to a flame. During the last twenty years or so, science has, in fact, been largely dehumanised in education; and it is high time that a change took place to make it more spiritual and human. This should be less of fine precision and more of living interest; more of stories of what science has done for the human race, not only

ustrially, but also in the pursuit of high ideals and the production of constructive benefits that are alone worthy of the title of knowledge. The position is eloquently stated by Prof. T. Brailsford Robertson in an address on "Science as a Vehicle of Education," published recently in the *University of California Chronicle*, from which the following extract has been taken:—

We have succeeded after many years of conflict with educational authorities in introducing scientific studies into the curriculum of schools, but what have we accomplished thereby? Through the agency of the compulsory dissection of flowers, the unalleviated study of statics, or the uncertain pursuit of the six elements of a chemical "unknown," we have given rise to a rooted aversion to science in the minds of many and have attracted a few to the pursuit of science for the sake of material gain, but in how many minds have we implanted the idea of the intrinsic value or the essential ultimate value of their scientific studies? The spectre of specialism has pursued "Science" must be chemistry, physics, geology, astronomy—anything rather than the study of the dependency of human welfare upon our capacity to control our environment, and the contemplation of the majestic scale of the order of Nature gradually unfolding itself to man's consciousness and placing in his hand implements of ever augmenting power to control destinies and attain that ultimate comprehension of the universe which has in all ages constituted the true aspiration of man. Had we offered this, we employed scientific education rather than scientific training as the introductory chapter of the book of scientific knowledge, then all the educated civilised inhabitants of the world to-day would look to science for hope and inspiration, and we would hear no more of the conflict between science and the "humanities," science would be recognised in its true light, as the greatest of the "humanities."

The recent report of the Committee of the British Association on Science Teaching in Secondary Schools directs attention to the need for instruction in the history and biography of science in order to secure that comprehensive view which laboratory work alone fails to give. The report of the committee on the scheme of examinations for Class I. of the Civil Service recognises the value of such a scheme by including among the subjects to be examined by all candidates a paper on the general principles, methods, and applications of science; and there is reason to believe that the Government Committee on Science will likewise recommend that teachers should, so far as possible, make themselves acquainted with the standard works on the philosophy and history of science in order to take the instruction out of the usual narrow grooves. It may serve a useful purpose, therefore, to give here a selected list of such books as a guide to the literature upon the subject.

It is, of course, not suggested that the whole of the works in this list should be known to teachers, but rather that a selection should be made from them for the private or the school library. The list has been limited to works published in English, because it seems too much to assume that science teachers in general are sufficiently familiar with other languages to read with interest and profit foreign books on the philosophy and history of science; and because the most important of such works have been translated into English. On a future occasion it is hoped to give a list of suitable popular books on science for general reading, but the present intention is to assist the teacher rather than the pupil. The prices given are those at which the books were published, but these have probably been increased in some instances on account of the war. It must be mentioned also that some of the books are out of print and can be obtained only from libraries. No doubt there are other books which should find a place in such a list as that subjoined; and particulars of them would be warmly welcomed.

#### A SELECTED LIST OF BOOKS ON THE METHOD, PHILOSOPHY, AND HISTORY OF SCIENCE.

##### *Method and Philosophy.*

H. E. Armstrong: *Teaching of Scientific Method.* (Macmillan.) 5s. net.

Edited by L. Dobbin: *Alembic Club Reprints.* (Simpkin, Marshall.) Various prices.

F. Enriques: *Problems of Science.* (Open Court Publishing Co.) 10s. net.

Faraday's *Experimental Researches in Electricity.* (Everyman's Library.) (Dent.) 1s. net.

T. Gomperz: *Greek Thinkers: A History of Ancient Philosophy.* (Murray.) Four volumes, each 14s. net.

F. Hodson: *Broad Lines in Science Teaching.* (Christophers.) 5s. net.

T. H. Huxley: *Introductory Primer of Science.* (Macmillan.) 1s.

W. S. Jevons: *Principles of Science.* (Macmillan.) 12s. 6d.

J. Locke: *Essay on Human Understanding.* (Routledge.) 3s. 6d.

E. Mach: *The Science of Mechanics.* (Open Court Publishing Co.) 8s. net.

J. S. Mill: *A System of Logic.* (Longmans.) 3s. 6d.

St. George Mivart: *The Groundwork of Science.* (Murray.) 6s. net.

T. P. Nunn: *Aim and Achievement of Scientific Method.* (Macmillan.) 3s. 6d. net.

W. Ostwald: *Natural Philosophy.* (Williams and Norgate.) 4s. net.

Karl Pearson: *The Grammar of Science.* (Black.) Part i. 6s. net.

H. Poincaré: *Science and Hypothesis.* (Walter Scott.) 3s. 6d.

H. Poincaré: *Science and Method.* (Nelson.) 6s. net.

H. Poincaré: *Foundations of Science.* In one

volume. (1) *Science and Hypothesis*; (2) *Value of Science*; (3) *Science and Method*. (New York: The Science Press.)

Edited by T. B. Strong: *Lectures on the Method of Science*. (Clarendon Press.) 7s. 6d. net.

J. Arthur Thomson: *Introduction to Science*. (Williams and Norgate.) 1s. net.

F. W. Westaway: *Scientific Method*. (Blackie.) 6s.

W. C. D. Whetham and Catherine D. Whetham: *Science and the Human Mind*. (Longmans.) 5s. net.

W. Whewell: *History of the Inductive Sciences*. (J. W. Parker.)

#### *Biography.*

J. H. Bridges: *The Life and Work of Roger Bacon*. (Williams and Norgate.) 3s. net.

J. J. Fahie: *Galileo: His Life and Work*. (Murray.) 16s. net.

A. Geikie: *Founders of Geology*. (Macmillan.) 10s. net.

T. L. Heath: *The Works of Archimedes*. (Cambridge University Press.) 15s.

Oliver J. Lodge: *Pioneers of Science*. (Macmillan.) 6s.

L. C. Miall: *Early Naturalists (1530-1780)*. (Macmillan.) 10s. net.

J. Tyndall: *Faraday as a Discoverer*. (Longmans.) 3s. 6d.

R. Vallery-Radot: *The Life of Pasteur*. (Constable.) 7s. 6d. net.

English Men of Science Series. (Dent.) 2s. 6d. net each volume:—

Ainsworth Davis: Thos. H. Huxley.

Andrew Gray: Lord Kelvin.

B. Daydon Jackson: George Bentham.

R. Lydekker: Sir W. H. Flower.

J. P. Millington: John Dalton.

J. Arthur Thomson: Herbert Spencer.

T. E. Thorpe: Joseph Priestley.

Century Science Series. (Cassell.) 2s. 6d. each volume:—

T. G. Bonney: Charles Lyell.

A. M. Clerke: The Herschels.

P. Frankland and Mrs. Frankland: Pasteur.

R. T. Glazebrook: J. Clerk Maxwell.

E. B. Poulton: Charles Darwin.

H. E. Roscoe: John Dalton.

W. A. Shenstone: Justus von Liebig.

S. P. Thompson: Michael Faraday.

T. E. Thorpe: Humphry Davy.

Samuel Smiles: *Lives of the Engineers; from the Earliest Period to the Death of the Stephensons*. Five volumes. Popular edition. (Murray.) 3s. 6d. each:—

Brindley, Vermuyden, Myddleton, Perry. Early Engineers.

Smeaton and Rennie. Harbours, Lighthouses, and Bridges.

Metcalf and Telford. History of Roads.

Boulton and Watt. The Steam Engine.

George and Robert Stephenson: The Locomotive.

Samuel Smiles: *Men of Invention and Industry*. Popular edition. (Murray.) 3s. 6d.

Samuel Smiles: *Industrial Biography; Iron-workers and Tool-makers*. (Murray.) 3s. 6d.

#### *History (General).*

Cambridge Graduates: *Science and the Nation*. (Cambridge University Press.) 5s. net.

E. Cressy: *Discoveries and Inventions of the Twentieth Century*. (Routledge.) 7s. 6d. net.

W. H. Doolittle: *Inventions in the Nineteenth Century*. (Chambers.) 5s.

C. R. Gibson: *Romance of Scientific Discovery*. (Seeley.) 5s.

R. A. Gregory: *Discovery; or, The Spirit and Story of Science*. (Macmillan.) 5s. net.

J. T. Merz: *A History of European Thought in Nineteenth Century*. (Blackwood.) Vol. i., 10s. net; vol. ii., 15s. net.

R. Routledge: *Discoveries and Inventions of Nineteenth Century*. (Routledge.) 7s. 6d.

J. Arthur Thomson: *Progress of Science in the Nineteenth Century*. (Chambers.) 5s. net.

A. R. Wallace: *The Wonderful Century; its Successes and its Failures*. (Allen and Unwin.) 7s. net.

S. Williams: *The Story of Nineteenth-century Science*. (Harper.) 9s.

S. Williams: *The History of Science*. (Hart's Five vols. £1 16s. net:—

Vol. i.: *The Beginning of Science*.

Vol. ii.: *The Rise of Modern Science*.

Vol. iii.: *The Progress of Physical Science*.

Vol. iv.: *The Progress of Chemical and Biological Science*.

Vol. v.: *Aspects of Present-day Science*.

#### *History (Special).*

History of the Sciences Series. (Watts.) 15s. each volume.

G. Forbes: *Astronomy*.

A. C. Haddon: *Anthropology*.

J. Scott Keltie: *Geography*.

L. C. Miall: *Biology*.

T. E. Thorpe: *Chemistry*. In two vols. Vol. 2000 B.C. to A.D. 1850. Vol. ii., A.D. 1850 to date.

B. Woodward: *Geology*.

J. W. Judd: *The Coming of Evolution*. (Cambridge University Press.) 1s. net.

H. F. Osborn: *From the Greeks to Darwin*. (Macmillan.) 8s. 6d. net.

Edited by A. C. Seward: *Darwin and Modern Science*. (Cambridge University Press.) 18s. net.

J. Arthur Thomson: *The Science of Life*. (Blackie.) 2s. 6d.

J. von Sachs: *History of Botany (1530-1860)*. (Clarendon Press.) 10s. net.

J. R. Green: *History of Botany (1860-1900)*. (Clarendon Press.) 9s. 6d. net.

Edited by F. W. Oliver: *Makers of British Botany*. (Cambridge University Press.) 9s. net.

K. A. von Zittel: *History of Geology and Palaeontology*. (W. Scott.) 6s.

A. Berry: *A Short History of Astronomy*. (Murray.) 6s.

W. W. Bryant: *History of Astronomy*. (Methuen.) 7s. 6d. net.

- A. M. Clerke : A Popular History of Astronomy. (Lack.) 7s. 6d.
- H. H. Turner : Astronomical Discovery. (Arnold.) 5s. 6d.
- 
- F. Cajori : A History of Physics. (Macmillan.) 7s. net.
- A. Schuster : Progress of Physics (1875-1908). (Cambridge University Press.) 3s. 6d. net.
- W. C. D. Whetham : The Recent Development of Physical Science. (Murray.) 5s. net.
- 
- J. Campbell Brown : A History of Chemistry. (Harcourt.) 10s. 6d. net.
- A. Findlay : Chemistry in the Service of Man. (Longmans.) 5s. net.
- Ida Freund : History of Chemical Composition. (Cambridge University Press.) 18s. net.
- A. Ladenburg : History of the Development of Chemistry since the Time of Lavoisier. (Simpkin, Marshall.) 6s. 6d. net.
- T. M. Lowry : Historical Introduction to Chemistry. (Macmillan.) 8s. 6d. net.
- E. von Meyer : History of Chemistry. (Macmillan.) 5s. net.
- M. M. Pattison Muir : History of Chemical Theories and Laws. (Chapman and Hall.) 17s. net.
- F. E. Thorpe : Essays in Historical Chemistry. (Macmillan.) 12s. net.
- W. A. Tilden : Short History of the Progress of Scientific Chemistry in Our Own Times. (Longmans.) 5s. 6d. net.
- W. A. Tilden : Chemical Discovery and Invention in Twentieth Century. (Routledge.) 7s. 6d. net.

#### MODERN HUMANISTIC STUDIES.

By C. H. C. OSBORNE, B.A.

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##### I.

In the discussions about the future of secondary education after the war, attention has been directed chiefly to the rival claims of classics and science. The educational world has been rent by a not very edifying party warfare, and those who care most for education have at times felt inclined to cry, "A plague on both your houses." It is true that there are signs of agreement upon a reasonable compromise. The upholders of the classics admit that no education is liberal which does not provide for some acquaintance with scientific ideas and methods. Scientific training, including experimental investigation in the laboratory, will in future be a substantial part of the education of all children up to the age of sixteen. The practical necessities of war have, further, carried conviction to all of the need for maintaining a constant supply of skilled men of science and for encouraging research. The development, financial and

otherwise, of the science sides in schools is assured. The public will insist that full provision be made for those who are going to study science at the universities, who intend to become physicists or chemists, or who will enter professions in which a specialised knowledge of science is necessary. Men of science, on the other hand, have generally admitted the debt of the modern world to Greece and Rome, and have agreed that a purely scientific education would be narrow and materialistic. The classical side is not likely, therefore, to disappear from the schools; modified by the inclusion of some science, and perhaps by a greater effort to bring its studies into relation with modern life, it will continue to attract some (though a smaller proportion) of the best minds.<sup>1</sup>

But the urgent problem of the organisation and teaching of modern humanistic studies has been largely overlooked. Neither those who advocate a classical nor those who advocate a scientific education have paid much attention to the humanistic possibilities of modern subjects. The classicist, while ready to concede that a liberal education is possible without Latin and Greek, has in practice been too busy defending himself against the attacks of the man of science to contribute his share towards the humanising of the other subjects of the curriculum. From the man of science there have, indeed, come repeated and insistent expressions of discontent at the ignorance of English literature and history still prevalent in many schools. But he has been slow to realise both that the classical side will require a different kind of scientific training from that given on the science side, and that the science side will need a special kind of humanistic training.

Many of our schools have, in addition to the classical and science sides, what is called the modern side. The description is somewhat of a misnomer. Latin is perhaps a necessary foundation for any modern education, but in the modern sides it is retained in the curriculum for no apparent reason, except that tradition sanctions, and the entrance examinations for the universities necessitate, its inclusion. The modern side's proper function is to provide for those who have no special aptitude for science or mathematics, but who seek a literary and linguistic training through the modern humanities.<sup>2</sup> Many boys and girls find it easier to get a liberal education through modern subjects than

<sup>1</sup> The resolutions passed by the Council for Humanistic Studies and by the last Headmasters' Conference at Rugby point to some such compromise.

<sup>2</sup> A division in the higher forms of secondary schools into classical, science, and modern humanistic sides corresponds with the suggestions made by the Board of Education (Circular 826) in 1913, and is recognised in the new regulations for the Higher Certificate, 1918.

through the classics. But the modern sides as humane institutions have hitherto been neglected by the ancient universities and the schools. It would be difficult to find a school which gives the opportunity of a wide and complete higher education in modern subjects. Existing modern sides—so far as they have any clearly conceived purpose—are utilitarian in outlook, and modern subjects throughout the school suffer from this lack of a unifying humanistic aim. Yet if we remember that all children are not fitted for a specialised training in classics or science, the importance of the modern side becomes apparent. In numbers it is sometimes the largest part of the school. The study of subjects such as modern history and modern languages is, moreover, essential to national welfare; and those who leave school without proceeding to a university have a right to something better than commercial French and bookkeeping.

The problem to be discussed is, then, twofold:

(1) How can modern subjects be made to give an equal, or something like an equal, humane training to that given by the classics?

(2) What other subjects should be studied on the science side besides science and mathematics? And in what manner should they be correlated to the science teaching?

## II.

Let us review briefly the position of the different modern subjects, and consider some of the difficulties which stand in the way of the solution of the two problems stated above.

On the importance of *English* as a subject it is scarcely necessary to dwell. The power to write clear, simple English and an interest in good literature should be given by any education. Probably, however, the advanced work in this subject on the modern and science sides should not be identical. On the modern side it is desirable that books should be studied primarily for their literary merit, and that more scholarly methods should be used than is often the practice. Teachers of English have yet to devise means of close and accurate training in the mother tongue such as have long been used in France. But on the science side stress will often be laid on the content rather than on the form of literature, though the latter must not, of course, be neglected. There are authors, such as Huxley, and books, such as Mill's "Liberty," which offer opportunity for discussion and naturally interest boys on this side. For reading books of this type, though they rank as literature, time could scarcely be found on the modern side. What is chiefly required on both sides, however,

is to get away from the fetish of the over-annotated text, through one or two of which the class wearily plods during a whole term. More important than the books read with the teacher are those which the children read for themselves. The experiment of giving school time—if only an hour a week—during which individual members of the class are allowed to read books chosen by themselves has been found to encourage wide interests and an enthusiasm for reading. Not only is an opportunity thus given to the teacher to direct out-of-school reading, but the testimony to their enjoyment of good books which children bear to one another is far more effective than any recommendation by the teacher can be. His advice is discounted by the feeling that it is his business to say he likes classic works; besides, grown-ups are known to read queer books. An alternative method is to allow the class to organise itself into groups for the purpose of studying a particular subject.

The question what *foreign languages* should be learnt is controversial. It seems clear, however, that on the science side Latin will be dropped at sixteen, and that French will be selected as the language of which thorough knowledge, not merely linguistic, should be secured. There must also be an opportunity of learning German or some other modern language sufficiently for scientific and commercial purposes. On the model side the Board of Education at present requires the advanced study of two modern languages which would normally be French and German. Latin will presumably be studied on the modern side at least up to sixteen. Unless, therefore, three foreign languages are to be mastered before that age, a task for which it may be difficult to find the time and which may not be desirable for all children, a definitely lower standard must be expected in the second modern language in more advanced work. It is of greater educational value to carry the knowledge of one language up to what may be called scholarship than standard than to aim at an equal standard in both. But Latin should be allowed as an alternative to the second modern language. French and Latin are more naturally allied studies, and the combination is of more humane value, than the traditional association of French and German. But it would, of course, be disastrous if German disappeared from modern sides.

The direct method has done much to vitalise the teaching of modern languages and in qualified hands has been a great success. Unfortunately, some of the best exponents of this method are unfitted to

velop the humanistic side of their subject. They are good linguists and phoneticians rather than men and women of wide culture. The result is that the literature of France and Germany is very much neglected in the schools, especially in boys' schools; yet there is no reason why boys of even average ability should not read and appreciate a considerable amount of French or German literature, both in and out of school. To speak and read French may be useful, to fit it more or less correctly may be a business asset, but a great deal more than is needed if the time devoted to the language is to be justified on humanistic grounds.<sup>3</sup> It is encouraging to note that the terms of reference of the Government Committee on Modern Languages direct to have regard "to the requirements of a general education, including an appreciation of the history, literature, and civilisation of other countries," as well as to the interests of commerce and the public service.

One reason why the study of a modern language is so often disjoined from the study of the culture of the foreign nation is the lack of scholarships in modern languages in the ancient universities. Oxford has only one scholarship offered every year, Cambridge a quite insufficient number. Again, the character of the Cambridge scholarships positively discourages a liberal aim in modern language teaching. French and German are both demanded of candidates and equally difficult papers are set in each. Language and literary attainments are tested by separate questions. The questions on literature are too numerous to be well done and such as might easily be crammed from a second-rate text-book. They are of the "brief notes" character. No knowledge of history is necessary. There is, in short, nothing in such an examination to fire the mane ambition and imagination of teacher or taught.

If Latin is to form part of the science student's education under sixteen, and to keep its place on the modern side, there is no doubt that progress in learning the language must be more rapid. There will be less time available and children will have to get more quickly beyond grammar to power of reading. It is claimed that this result can be obtained by using the direct method of teaching Latin; but it is discouraging to read Dr. Rouse's complaint<sup>4</sup> of the "complete failure of our appeal to the leaders of the teaching profes-

sion" to investigate the facts. The Latin on the modern and science sides must not be dominated by the traditional methods of the classical side. Composition must be dropped; it is facility in reading that matters. There is a great deal to be said in favour of reading on modern sides some "modern" Latin—a medieval chronicle, or Erasmus' Letters, for example, might be used to illustrate the appropriate period of history. Provision is now made for this in the regulations for the Higher Certificate and for the History Previous at Oxford.

*History* is a subject struggling for recognition in many schools. In the past it was probably one of the most inefficiently taught, and headmasters are still inclined to view it with suspicion. It is not long since attention was exclusively given to English political history carried down not later than 1832. "In the course of his school career," says Mr. Arnold Bennett of the hero of "Clayhanger," "he had several times approached the nineteenth century, but it seemed to him that, for administrative reasons, he was always being dragged back again to the Middle Ages. Once his form had got as far as the infancy of his own father, and concerning that period he had learnt that 'great dissatisfaction prevailed among the labouring classes, who were led to believe by mischievous demagogues,' etc. But the next term he was recoiling round Henry the Eighth, 'who was a skilful warrior and politician, but unfortunate in his domestic relations'; and so to Elizabeth, 'than whom few sovereigns have been so much belied, but her character comes out unscathed after the closest examination.' History, indeed, resolved itself into a series of more or less sanguinary events arbitrarily grouped under the names of persons, who had to be identified with the assistance of numbers. Neither of the development of national life, nor of the clash of nations, did he really know anything that was not inessential and anecdotic. He could not remember the clauses of Magna Charta, but he knew eternally that it was signed at a place amusingly called Runnymede. And the one fact engraved upon his memory about the Battle of Waterloo was that it was fought on a Sunday."

Things are better now. Recent years have seen a remarkable revival of interest in history among teachers and the general public. Method has been improved, though it is still in the experimental stage. There is a growing tendency to widen and simplify the history syllabus. The increasing complexity and seriousness of modern problems, the growth of democracy, the recognition of

<sup>3</sup> See Stanley Leathes' "Why Should We Learn French?" (Humphrey Head) Address to the Association for the Reform of Latin Teaching (see THE SCHOOL WORLD, February, 1917, p. 52).

the child's natural interest in his environment, and the general tendency to bring the school into closer touch with life, have modified the older syllabus, and led to a greater emphasis being laid upon social and nineteenth-century history. The war has shown the dangers of insular ignorance and prejudice, and, on practical as well as on general educational grounds, it is certain that in future the schools will have to add European history to their curriculum. How are these new calls upon the limited time at the disposal of the teacher of history to be met? Partly by rearrangement of the work done at different stages in the school-life, partly by more effective correlation with other subjects, partly, and this is inevitable, by reducing the time given to English history, and, above all, by a determined rejection of the meaningless detail which a sterile tradition requires to be taught. In the earliest stage no formal study of history is of course possible, but a very important preparation can be made. Children should become acquainted with the main stages of civilisation and the character of the chief nations of the world through hero-stories, geography, and handwork. An elementary but clear knowledge of the main events of English history in their chronological sequence should be impressed on their minds.<sup>5</sup> In day schools the organisation of clubs or Boy Scouts for the purpose of a regional survey of the district<sup>6</sup> may be used to familiarise the children with the elements of social and political life—to make concrete abstractions such as law, property, central and local government, etc.<sup>7</sup>

A framework will thus have been acquired, interest in the story of how the present came about aroused, and some realisation that English history is but a fraction of human history secured. Children will then be ready for a more systematic study of English history extending over two or three years. The syllabus will be planned so that when English history is most closely related to Continental movements, excursions into European history are made. Such excursions are never very satisfactory, and are apt to be bewildering, but this is probably all that can be done in the elementary school.<sup>8</sup> But in the secondary school European history must be studied as a whole, not from the point of view of any one country. In the highest forms there should be a two years' course of Outlines of General

European History, beginning with the ancient East and growing fuller as modern times approached. Emphasis should be laid on the main tendencies, on the working out of the permanent forces in history, on the different civilisations and cultures and the making of the modern European state system.<sup>9</sup> To do this successfully, all the time usually allotted to the subject (about two and a half hours, including preparations) will be required, but if another hour or two could be added, whether in the time-table under the heading of history or English is immaterial, a great deal more would be possible. There would be room for the collateral reading of masterpieces of European literature (Homer and Greek plays in translation, the Chronicle of Jocelin of Brakelton "Everyman"; More's "Utopia," etc.). One term in the year could be given to economic history, elementary applied economics, elementary political science, and one or more terms could be given to the intensive study of a period of English history falling within the European outlines. The books studied in the modern language hours should also to some extent be correlated. Obvious examples are a play of Racine with ancient history and literature, the "Chans de Roland" and "Aucassin et Nicolette" with the medieval, Molière with the age of Louis XIV., Voltaire with the Revolution. It is scarcely necessary to dwell on the humanistic value of such a course. Some such syllabus has been adopted in more than one school and has been found to interest scientifically minded boys who have never shown enthusiasm for the ordinary English history of the classroom. It is believed that the course would suit both the modern and scientific sides.

It only remains to say a few words about the place of science. I am not qualified to judge of the needs of the science side, but I note with interest the opinion of Prof. R. H. Gregory that the science course for those under sixteen should be more general and give prominence to the human element. Even on the science side, specialisation might be carried too far. Science scholarship especially at Cambridge, certainly shows an increasing tendency to demand high specialised knowledge, while the general paper is said to count very little. This means early specialisation on the part of candidates to the neglect of their general education. It is to be hoped that the question will be considered.

<sup>5</sup> Attention may be directed to the admirable series of "Piers Plowman" Histories (Junior Books), planned for this purpose by Miss Spalding, of Goldsmiths' College.

<sup>6</sup> An inspiring experiment on these lines was carried out by Mr. Valentine Bell at Lambeth Council School.

<sup>7</sup> J. W. Allen, "Place of History in Education," pp. 193-203.

<sup>8</sup> See Archer, Owen, and Chapman, "The Teaching of History in the Elementary School."

<sup>9</sup> This is the aim in America. Messrs. Ginn have published a series of books by J. H. Breasted, J. H. Robinson, and C. H. Beard well adapted to this purpose.

<sup>10</sup> Address to Public Schools Science Masters' Association (see THE SCHOOL WORLD, February, 1917, p. 49).

dered by the Government Committee on Science. The university, rather than the school, should turn out specialised chemists and physicists. It is more important that boys should be acquainted with the best scientific literature, and that Darwin, Huxley, Mill, and Karl Pearson should be something more than mere names to them. Finally, a course of general science for the higher forms both on the classical and modern sides has yet to be devised. Pupils entering them will already have had a substantial amount of training in scientific method through one or more sciences. What is needed to complete a general education is some knowledge of the general results reached in the different sciences and a keen appreciation of the important part science plays in modern civilisation. Various suggestions for securing this have been made. A course in the history of scientific discovery has often been proposed, but is difficult to arrange, except in astronomy. Some writers, such as Mr. W. H. S. Jones, favour the study of the elements of logic as exemplified in scientific method—a course dealing with the proper use of inductive and deductive reasoning and with the principles of evidence. Others, again, suggest a course of comparative morphology in plants and animals, leading up to the various phases of evolutionary theory and the agricultural possibilities of Mendelian breeding." Two hours a week are all that would be necessary.<sup>11</sup>

### III.

The lack of effective correlation between the different parts of the curriculum is, as we have seen, one of the chief deficiencies in the existing organisation both of modern and science sides. Subjects are kept in watertight compartments and are necessarily in the hands of specialists, who unfortunately often care more for their particular branch than for the general aims of education.<sup>12</sup> The ancient universities are partly to blame. The Medieval and Modern Language Tripos at Cambridge has not tended to produce linguists with wide interests, but dryasdust philologists. The proposals for reconstituting the Tripos, with their recognition that "literature should be studied with close reference to the history and social conditions under which it has grown up," will make co-operation easy between teachers of modern languages and history.<sup>13</sup> A similar reform is necessary in examinations for entrance scholarships. A

modern language and its literature (alternative to classics) should be allowed weight as an ancillary subject for history scholarships, and the history of the country the language of which is being studied should be given a place in the examination for modern language scholarships. Magdalen College, Oxford, has this year offered for the first time a scholarship in modern subjects, allowing for a considerable combination of subjects. In addition to the obligatory papers in English, history, literature, and a modern language, candidates may offer a paper in ancient history, mathematics, or science. If it is found practicable to judge promise by scholarships of this kind—a matter of some doubt—their establishment would encourage the development of an all-round liberal education in modern subjects. The boy on the modern side must have an aim equal in humanistic value to that already provided for the boy on the classical side.

The problem of a better synthesis of subjects is more difficult on the science than on the modern side. The present position is characterised by Dewey.<sup>14</sup> We have, he says, "a somewhat mechanical compromise whereby the field is divided between studies having nature and studies having man as their theme." But education "should aim, not at keeping science as a study of nature apart from literature as a record of human interests, but at cross-fertilising both the natural sciences and the various human disciplines, such as history, literature, economics, and politics." Our present procedure "institutes an artificial separation in the pupil's experience. Outside of school pupils meet with natural facts and principles in connection with various modes of human action. . . . To start them in school with a rupture of this intimate association breaks the continuity of mental development, makes the student feel an undescribable unreality in his studies, and deprives him of the normal motive for interest in them." As Dewey rightly says: "Any subject is cultural in the degree in which it is apprehended in its widest possible range of meanings—to see a scientific fact in its human as well as in its physical and technical context is to enlarge its significance and to give it increased cultural value."

How is this cross-fertilisation to be effected? How is the human reference of the natural sciences to be shown in the classroom? Can we from chemical facts pass to their application in industrial processes, and thence to economics and politics? The difficulty is to settle who is to be responsible for the connect-

<sup>11</sup> See "Science in the Public Schools," by Mr. D. R. Pye, in the *Twentieth Century*, July, 1916, pp. 110-11; and W. H. S. Jones, "How.

"Learn" and "Scientific Method in Schools."

<sup>12</sup> See the remarkable book by Mr. B. Branford, "Janus and Vesta."

<sup>13</sup> Cambridge University Reporter, February 27th, 1917.

<sup>14</sup> Dewey, "Democracy and Education."

ing links. The honours man in science will in future, we may hope, know something of industrial chemistry. How can we ensure that he will have studied economics and politics? From the honours man in history we may in future expect a knowledge of economics. Will he know sufficient of the application of science to industry? Shall the bridge be built by the geographer with his knowledge of the interaction of man and nature? Does the solution lie in making biology or psychology a school subject, relating the structure or instincts of man to those of the animal world, and following this up by a consideration of the action of man—the social animal—in society? To these questions there is no answer that would command general assent. The need for discussion and for experiment in the schools is urgent. When the battle of the ancients and moderns has abated, perhaps we shall find time to consider these and other vital problems in the organisation and teaching of modern subjects. The traditions of a modern humanistic education have yet to be made.

#### SCHOOLS AND PUBLIC LIBRARIES.

By JOHN SWAIN, B.Sc.

**T**HE need for more self-reliant activity than is usually displayed by the pupils in our elementary schools has long been felt by those interested in primary education, and for some time teachers, organisers, and officials have been seeking suggestions likely to bring about an improvement in this respect. One of the most obvious methods is the extension of individual reading, whereby the pupil is encouraged to extract from standard books suitable information and afterwards to arrange the facts. Without careful supervision the plan is likely to lead to desultory reading, with all the evils that such a habit engenders. Not merely must a definite aim be insisted upon, but a prescribed plan should be drawn up and only a limited deviation from it allowed.

At the beginning of the summer session of 1915 my headmaster expressed a wish that the elder boys under my charge should set to work on the lines indicated above. I pointed out that they were already in the habit of making their own notes when reading history and geography, but suggested that something more in the nature of investigation could be done, provided they had access to books other than those usually found in elementary schools. We have a small reference library for the use of the staff, and from this we made a selection. By adding to these a few

of our own private books, ten or a dozen volumes were got together bearing upon historical subjects, and with these I decided make a start.

The subject fixed upon for investigation was the development of the military system in Western Europe, dealing with the soldier, his equipment, organisation, and relations to the other members of society. I drew a syllabus, sketched out a plan of procedure, and began to put it into operation. I soon discovered, however, that the books at my disposal gave but little scope for investigation, on account of the scantiness of the particular information we were seeking, although they were useful for showing the boys how and where to look for the facts they required.

As a means of surmounting this difficulty I suggested to the Head that use might be made of the public library, not so much by borrowing books as by making periodic visits to the reference-room and there carrying on the work. While engaged in making researches in connection with my own studies I had made myself fairly well acquainted with the library; and as I knew the chief librarian personally, the Head requested me to suggest what arrangements could be made. I interviewed the librarian and found him more than ready to fall in with the suggested scheme. We went through the syllabus together, and in the course of a few days he sent me a list of books, which afterwards proved very useful.

It was not considered advisable to take more than a dozen pupils to the library at any one time, and it was found possible to limit the number without any serious disturbance of the arrangement of the school time-table. The highest class consisted of about thirty-four boys, and on Tuesdays they attended the work centre—twenty for one session, and the remainder for the other. The smaller section contained the oldest pupils, and with them the experiment was made, by taking them, during the absence of their class-mates, to the reference-room for the last hour of session.

Although one of the objects of the scheme was to foster self-reliance, the need for a certain amount of preliminary instruction was obvious. The boys required guidance in selecting the books suited to their purpose, in searching for the facts bearing on the subject under review, in discriminating between matters of detail and those which are essential, and in taking notes in a terse yet intelligible form. In note-taking they had already had experience, and use was made of the small collection of books in the school to give exercises in searching for matter with the help of the "contents" and "index" pages.

When about to proceed to the library the boys were supplied with note-books and pencils, and were arranged in pairs. It was impossible for all to be at the same time investigating the same facts; accordingly, six hints dealing with some general subject, or one particular period, were chosen. These were written on slips of paper and one given to each pair of boys, sometimes with an intimation that certain books would probably be found useful.

An hour or so before the intended visit a message was sent to the library inquiring if the time was convenient, frequently with a question that certain books, if available, should be in readiness. This invariably evoked a favorable reply.

During the earlier visits the boys were instructed as occasion required in the economy of the library, and the arrangements were pointed out whereby the convenience and comfort of readers were assured. On entering the reference-room the boys were required to give their names in the "Readers' Book," and then those with appropriate subjects were handed the books already selected and set to work. Others were taken to the stand where the volumes of the "Encyclopædia Britannica" were kept; their attention was directed to the alphabetical arrangement; and they were told that a volume having been selected, it should be carefully carried to the nearest available desk. The remaining pupils were now attended to, and as in their case it was not obvious what books they should use, the methods of finding and obtaining them were pointed out and explained. They were shown how the various works were grouped under suitable headings and allotted definite positions on the shelves. They were taken to the card-index cabinet, and after its arrangement and use had been described, a subject was selected and a boy, or perhaps two, were instructed to search for the name and number of a book bearing upon it. Readers in the reference-room enjoyed the privilege of obtaining from the lending department any books which were in at the time, and a catalogue of these was placed at their disposal. This the boys were encouraged to consult, and as much help and guidance were given as the occasion called for. Further, the necessity of filling up carefully and accurately the forms to be given to the attendant was insisted upon, not only for the sake of saving the time of the readers, but also to inculcate habits of orderliness and a regard for the convenience of those in charge of the institution.

Having secured a volume likely to be of service, the reader was confronted with the most difficult part of his task. If he had but

a vague idea of his line of procedure, nothing was lost by leaving him for a few minutes to turn over the pages in an aimless manner; for the feeling of helplessness which this engendered made him anxious to obtain the guidance of the teacher, who, with a look or word of reproach, gave him to understand that he was not doing what was expected of him. He was told to turn to the "contents" pages, run his eye down the table, pause at a suggestive heading, and turn up the pages indicated. If this table was absent, or failed to give the necessary leading, the "index" pages were consulted, with the result that in a short time a clue was obtained to the mystery which had so long baffled the investigator. The library contained an index to the "Encyclopædia Britannica," which was occasionally requisitioned, and after being shown a few examples of its use, the boys were encouraged to resort to it when an inspection of the ordinary alphabetical arrangement proved fruitless.

Before taking notes the readers were instructed to write at the head of the first page the subject of investigation and the date when it was made. Then followed the title of the book consulted, the name of the author, and the date of its publication. The numbers of the pages were also inserted, except in the case of encyclopædias and books of a similar kind.

The notes were not intended to form a digest of the passages read; they consisted of a succession of independent sentences, each commencing with a new line and recording a single fact. The reader was expected to grasp the salient point in a paragraph and jot it down in the fewest words compatible with the formation of a grammatical sentence. Where simple drawings were found illustrating the text, the boys were encouraged to copy them, with just sufficient detail to bring out the peculiar feature of the object. Thus the hoops of the early cannon were brought to the notice of the boys, and they were set to find out when and how a faulty fitting of these hoops caused the death of a certain Scottish king. The period during which this kind of ordnance was in use gave them some clue, and most writers of Scottish history record the fact.

Not infrequently the pupils were held up by difficult or unusual words, and the teacher was often asked to furnish an explanation. Sometimes this was given without comment; at other times the reader was sent to the attendant to apply for a dictionary. After a time this application became unnecessary, and dictionaries were taken from the shelves when required.

The appearance in the text of letters, num-

bers, and signs referring to foot-notes and appendices were at first subjects of inquiry by the boys, and they were cautioned not to let them pass unheeded. If, as was often the case, they referred to some fuller account by some other author, an endeavour was to be made to discover his name in the catalogue or on the shelves, with the object of consulting his work on the same or a later occasion. This led to the tracking of information to its original source. But not much could be done in this direction, for, although the reference department contained a copious collection of reports on medieval documents, together with an almost complete set of Journals of the Royal Historical Society, their contents were for the most part beyond the comprehension of pupils in elementary schools. Some contemporary writings, however, were found to be both instructive and interesting, and useful help was obtained from them. Thus the "Paston Letters" served to show the comparatively small effect which the Wars of the Roses had upon the lives of ordinary citizens of the period; and the diaries of Evelyn and Pepys helped to make real the events following the Restoration, although circumspection was necessary in dealing with the latter author, as his ideas of morality and public honesty were not always exemplary. The works of contemporary writers are invariably of great service; for, by taking note of the minor occurrences of their day, they have been able to leave us a living representation of the events and personages that made society what it was, but which in modern literature are apt to be hidden behind the halo of romance which surrounds the more conspicuous characters of the period.

The notes taken were produced in the classroom on the occasion of the next history lesson, for the purpose both of co-ordinating the information gained and of sharing it with those members of the class who had not had the privilege of visiting the library. Certain pupils were required to read out what they had written, while others criticised or suggested additional facts which they considered to be of importance.

Occasionally three or four of the boys were sent to the library to search for information by themselves. They were given such hints and guidance as were considered necessary, and left to act much in the same way as when the whole section was there accompanied by the teacher. This was a coveted distinction, and, judging from the notes taken and the casual reports of the attendants, the results justified the experiment.

The continuation of the war led to a depletion of the library staff, with the result that the borough council decided to close the

reference department. As a consequence we were unable to carry on this part of our work through the following session, much to the regret of the boys, who had been accustomed to look forward to the weekly visit as an agreeable break in the ordinary schoolwork.

## STANDARDISING AND COMPETITIVE EXAMINATIONS.

**T**HE incidental reference by Mr. Nowell Smith, in his article in the October issue of THE SCHOOL WORLD (p. 342), to the widely different functions of examinations intended to decide if candidates have received certain prescribed courses of instruction and have reached definite standards of attainment in certain subjects of the curriculum, and the purpose of which is to select a limited number of persons from a large number of competitors for public appointments, scholarships, or exhibitions, should serve to indicate the diversity of aim and method between what may be distinguished as standardising and competitive examinations.

As typical instances of standardising examinations, the matriculation examinations of the universities and the First Examination described in Circular 849 may be cited. The object of each of these examinations is the same, viz. to determine if the candidates have received a "broad general education," a course which has had the advantage of a satisfactory course of secondary education. But unfortunate educationists are far from agreement as to what constitutes a "broad general education," a question as to what a satisfactory course of secondary education comprises. The study of matriculation requirements and of the recent Board of Education circulars on school examinations does not make it possible to define either with any precision.

Such research, in fact, leads to some bewildering results. Circular 849 states that the First Examination (for boys and girls) sixteen or sixteen and a half years of age, candidates will be expected to show a reasonable amount of attainment in three main groups of subjects: (i) English subjects, (ii) languages, (iii) science and mathematics. Circular 933 "notes with satisfaction," among other schemes, the revised regulations for the Oxford Local Examinations, and since the universities are to be recognised as the responsible bodies through which examinations in secondary schools will be normally conducted, it is instructive to determine some of the ways in which Oxford (to take one example) prepared to award certificates to pupils of the age of those taking the First Examination.

The revised regulations make it possible to cure a senior Oxford certificate, and presumably to cover the requirements of the First examination, by passing in four subjects, such as, for instance: (i) English composition and one of a large number of set English books; (ii) Greek or Roman history; (iii) Latin or Greek; and (iv) mathematics. Or, to take another possible combination: (i) English composition and a set English book; (ii) geography; (iii) Welsh; and (iv) one of several branches of science. Since there are twenty subjects specified in the regulations for Senior Oxford Local Examinations, it is possible, notwithstanding the proviso that every candidate "must, at one and the same examination, reach a sufficient standard in Section I. [English] and in at least three of Sections II.-XIX. (of which one must be selected from Division II. and one from Division III.)," to compile a large number of combinations equally unsatisfactory from the point of view either of ensuring that the candidate has received a "broad general education," or, to quote Circular 849, of testing "the course of general education before the pupil begins such a degree of specialisation as is suitable for secondary schools." It is to be hoped that the new Secondary-School Examinations Council will be able to devise more reasonable and educational tests of a "broad general education" than are offered by examinations at present available. It is noted with satisfaction by the Board of Education. "The Scheme for Tests of Secondary-School Education," contained in the recently published report of the Education Reform Council,<sup>1</sup> may be commended to its attention. The Reform Council recommends the award of certificates which should be regarded chiefly as certificates of educational training and guarantee that the holder has (a) pursued an approved course of work at an inspected school to the satisfaction of the school authorities; (b) passed an external examination on some part of his work which is judged to be suitable for such a test. As regards the external examination, it is laid down in the report that the certificate should state that the holder has proved to the satisfaction of the examining body (a) that he can express himself clearly and grammatically in written English and arrange what he has to say according to a definite plan; (b) that he can read aloud an easy passage of English, clearly and intelligently; (c) that he has a competent knowledge of the elementary processes of arithmetical computation. The certificate should also state, the report urges, that the holder has

passed an examination in not fewer than four subjects forming part of the regular curriculum of the school, and approved by the examining body, the subjects being recorded on the certificate.

A certificate affording guarantees on these points, and also subject to the other conditions specified in the report of the Education Reform Council, would certainly indicate with considerable certainty that its holder had received a "broad general education" and was in a position to take up the more serious study of some branch of human knowledge.

More importance must, in fact, in the future be attached to the general efficiency of the secondary schools in which boys and girls are educated, and this efficiency will be assured most easily by the friendly co-operation of teachers and inspectors. Given efficient schools, it should be easy for examiners to decide both upon a reasonable standard and whether the pupils have reached it. In arriving at their decision due weight should be given by the examiners to the considered opinions of the teachers as chronicled on the pupils' school records.

Along some such lines as the Reform Council has indicated it should not be difficult, as Mr. Nowell Smith says, to conduct sane examinations of the qualifying or standardising kind. But the case of competitive examinations is different. Here the problem is to select from a large number of candidates a limited number who are most suitable for some specific purpose. One condition would seem to be imperative, though hitherto it has not always been insisted upon. Every candidate, before being recognised as a competitor, should have passed a suitably arranged qualifying examination. Only after the conditions of this qualifying test have been decided upon is it possible to determine the character of the competitive examination, and this will vary according to the purposes for which the selection of candidates is to be made. But whatever the purpose of the competitive examination, certain general principles apply in all cases, and among these some are being more and more recognised. Written examinations alone are insufficient; they should be supplemented by either, or both, oral examinations and personal interviews. The competitive examination should not encourage one-sidedness or undue specialisation; for instance, the science specialist should not be permitted wholly to neglect modern languages and literature; and the classical scholar should be expected to show some acquaintance with mathematics and science. Nor should the examination recognise a mere smattering in any subject; and no credit should be secured

<sup>1</sup> Westminster : P. S. King and Son, Ltd., 1917.

in any subject unless a reasonable minimum standard is reached.

Lord Rosebery once regretted the non-existence of a college for the training of examiners; and though in the absence of professors capable of giving such training many will not share this regret, it seems to be time to give more serious attention to the whole art of examination, since examination tests vitally affect the progress of education in this country.

#### PERSONAL PARAGRAPHS.

**M**MR. E. A. GARDINER, head of the science side of Berkhamsted School, has been appointed headmaster of Louth Grammar School. Mr. Gardiner was at Preston Grammar School from 1896-99, when he won a leaving scholarship and an exhibition of the Lancashire County Council to Keble College, Oxford. After graduating he became science master at Plymouth College and later house tutor in the headmaster's house. Under his charge the science department made good progress, new laboratories were built, satisfactory results were obtained, and the subject became extremely popular. In 1906 he left Plymouth to go to Berkhamsted, where Mr. Whitehead had held the science mastership.

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MR. S. R. UNWIN, who has resigned the headmastership of Louth Grammar School, was educated at Shrewsbury School and Selwyn College, Cambridge. He was formerly a master at Rossall, Eltham College, and Loughborough Grammar School. He then became senior master at St. Albans, and in 1911 went to Louth as headmaster.

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MR. J. R. BLAKISTON, formerly His Majesty's Chief Inspector of Schools in the North-West of England, died at Portmadoc on September 21st at the age of eighty-eight. Mr. Blakiston was the last of the great Birmingham scholars under Dr. Prince Lee. Lightfoot, Westcott, Benson, and Hutchinson have all gone, and now Blakiston. Others might be mentioned. Holden and Evans became headmasters at Ipswich and Birmingham; Keary and Rendall masters at Harrow. Upon leaving Cambridge Mr. Blakiston took a second mastership at Uppingham under Dr. Thring. He was afterwards appointed headmaster at Preston Grammar School, and in 1868 he gave up teaching and became H.M. Inspector of Schools for Leicestershire, and in 1882 was appointed Chief Inspector for the North-West of Eng-

land and Inspector to the Sheffield district. He retired in 1894. Mr. Blakiston was a great reformer in educational matters. As a headmaster he was a pioneer in introducing modern pronunciation of Latin, and Sheffield his name is still held in high regard for the improvements he brought about in schools of the city.

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A NEW panel has been fixed during the holidays in the school hall of Eton College, and the portrait of the late Mr. E. C. Austen Leigh, for many years lower master, has been hung upon it. It was painted by the late Mr. Charles Furse and was presented to Mr. Austen Leigh by former members on his retirement from his house. It was left by him to the college. The panel has been added as a tribute to memory by his old boys, and bears within its folding sides the names of those of the number who have been killed in action.

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LIEUT. A. T. LONG was killed in action in France on August 22nd. Mr. Long matriculated at the London University from Bishop Stortford School, and at once commenced his career as a teacher in a private school at Bournemouth. In 1901 he entered Borou Road College, Isleworth, and graduated from London. After studying the language and educational system of Germany Mr. Long obtained a teaching post at Devonport, at which he proceeded to a school at Croydon and later to Stramongate School, Kendal. His next mastership was at Market Drayton. One of his colleagues writes of him: "He was a fine schoolmaster, and simply worshipped by boys." Shortly after the outbreak of war he accepted a commission in the Royal Scots, and in this capacity he once again showed the wide scope of his abilities and his capacity for ruling and training men as well as boys.

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AMONG the schoolmasters killed in the war is Lieut. Arthur Walsh. Shortly before the outbreak of the war he was appointed teacher in languages and literature at the Nelson Municipal School, Lancashire, but at his request was relieved of this position in order to undertake military service.

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THE death is announced of Miss M. Gurney, who was one of the pioneers of the movement for the improvement of the education of women. After the report of the Commission had revealed the unsatisfactory state of the provision for women's education, Miss Gurney helped to establish the union which developed into the Girls' Public Day School.

trust. During the forty-five years of its existence she had watched the gradual fulfilment of the hopes of the founders. For this period Miss Gurney was a member of the Council, which directs some twenty-five schools with an average of about six thousand pupils. The Trust has been greatly helped by her wise counsel, her unquenchable enthusiasm, her zeal for truth, and her wide sympathy. Miss Gurney also took part in the direction of Girton College, Cheltenham Ladies' College, Princess Helena College, and other institutions.

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MISS McLULLICH, headmistress of the Barrow Municipal Secondary School for the last twenty-three years, died recently. Miss McLullich entered the service of the Barrow Education Authority in 1894, when the school numbered only 180. Its numbers are now 220. The deep tribute of appreciation of the work accomplished by Miss McLullich was placed on record at the last meeting of the Education Committee.

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THE death is announced of the Rev. W. B. Box, a master at Brighton College and formerly of Bedford and Uppingham.

ONLOOKER.

## EDUCATION IN SCOTLAND.

THE Report of the Committee of Council on Education in Scotland for 1916-17 (Cd. 8648, price 1s. net) is limited this year in the interests of economy to a general survey of the work of the past session. The detailed reports and full statistics of normal times are lacking, but this is not altogether a loss, as the impression leads to the more important features standing out in prominent relief. The report bears testimony to the remarkable efficiency which has characterised the work of the past session, notwithstanding the serious handicaps under which instruction was given throughout the year. The following extracts show how anxiously and sympathetically the responsible authorities are keeping in touch with the work of schools under the existing trying conditions, and how admirably on the whole both teachers and managers are responding to the calls upon them :—

### THE WAR CONDITIONS AND SCHOOLS.

During the whole of the period under review war conditions have been continued. While we can again express our cordial appreciation of the efforts made by managers and teachers to minimise the interference with education, we are bound also to repeat our regrets that the effects of the war upon our work should in many directions be so serious and should to a greater extent call for relaxation of the ordinary requirements of the Department. Were this relaxation confined to affairs of administration, it would not greatly trouble us; but the information in our possession shows that in many districts regularity of attendance and efficiency

of instruction are being affected and the normal period of school life curtailed.

No one who is interested in the welfare of children can view without deep concern the fact that some thousands of pupils are leaving school at present with an educational equipment the defects of which will never be made good. Where this is inevitable owing to removal of staff or use of school for military purposes, nothing can be said; but where it is the result of indifference to securing attendance or of ill-regulated exemption a serious responsibility rests upon School Boards. The Department may well be excused for raising questions when it finds adjoining School Boards differing widely in the numbers of exempted children. This is true of various employments, but it is specially true of agriculture. In some cases we have even been requested to permit the exemption of children under twelve years of age, in defiance of the clear terms of the Education (Scotland) Act, 1901. Our view is that the labour of school children should be utilised only in the last resort, and, subject to that general principle, we have not felt at liberty to interfere with any School Board which was carrying out its duty in a reasonable way.

### THE INCREASE IN JUVENILE CRIMES.

While, however, the physical well-being of the children has on the whole improved, and no effort is being spared to prevent intellectual loss due to the war, we regret the apparent break in what we hoped was a steadily rising improvement in morals and manners. It is easy to exaggerate the importance of statistics of juvenile delinquency, and to forget that what our legal conventions dignify as offences, if not crimes, are very often childish pranks. But due allowance being made, the police records in regard to youthful offenders demand the attention of all interested in the training of the young. Mr. Munro Fraser, Chief Inspector of the Western Division, in referring to the increase in the number of juvenile offences, says :—

"Such causes as the absence of parents and social workers during the war, the darkening of our public streets, the high wages earned by juveniles, and the prevalence of the fighting spirit—not by any means an unmixed evil—are to be credited with most of these outbursts of misdirected activity."

Noting some criticism of the schools in relation to the training of character, he says :—

"I am inclined personally to believe that the impulse to act rightly on the part of the average scholar has improved, except in the congested and more squalid districts of our large towns, and that the habits of industry and self-control that are acquired in the day school are largely responsible for this fact. Moral discipline, so far as it can be produced in schools, whatever help it may receive from the inculcation of civics and of specific moral duties, must in the main depend upon the influence of the teacher's own personality and his ability to infuse the true spirit of work and obedience into those under his charge. It must be remembered, however, that our elementary schools have no boarding-houses attached to them, and that the ultimate responsibility for the good conduct of the

children, as they grow up, rests upon their parents and guardians, who, it is to be feared, are not always in sympathy with the discipline to which their children are subjected at school."

#### INTERMEDIATE AND SECONDARY EDUCATION.

During the year ended August 31st, 1916, there were 196 higher grade schools or departments, with an average number of 30,609 scholars on the registers and an average daily attendance of 28,234. In the year 1914-15, with the same number of schools, the number on the registers was 29,488, the average daily attendance being 27,102, while the fifty-six schools earning grant under the regulations as to grants to secondary schools, including preparatory departments not in receipt of grant under the day school code, had on their registers at the end of the session in the two years in question 20,317 and 19,866 pupils, with average daily attendances of 19,338 and 18,448 respectively. In considering these statistics regard must be had to the fact that not a few of the older lads, who in ordinary circumstances would have been at school, are now in the ranks of the Army. But for this the numbers would have been larger.

Returns of enrolments in intermediate and post-intermediate courses in the session 1916-17 furnished by managers show that some 17,837 pupils entered upon the work of the intermediate course, at one stage or another, at the centre schools—an increase of 873 over the number for the previous session. Out of the total number of 17,837 by far the larger proportion—17,554—were enrolled as first-year pupils, and of these 17,554 the number promoted from the junior division of the centre schools was 7,822, as against 7,600 last year, while the number joining the centres from purely primary schools was 9,171, as against 8,397. For post-intermediate courses, in the current session 3,289 have been enrolled in the first year as against 3,251 in 1915-16.

The Act of 1908 empowered the Secondary Education Committees to make payments out of the district funds of such sums as they deem necessary to enable properly qualified pupils to proceed from primary to intermediate or secondary schools. The expenditure upon bursaries by the Secondary Education Committees has been, during the financial year ending May 15th, 1916, £64,983, as compared with £62,864 in the previous year. If to this be added an approximate expenditure upon bursaries of £65,000 from separate endowment funds administered by the committees or by the governors of the endowments, a total of £129,983 is reached. It is not certain that, even with this large expenditure, the needs of the more remote and widely scattered districts are as yet quite adequately met; the difficulties in the way of securing an equitable distribution are naturally very great. But with growing experience the administrative bodies concerned are yearly learning how to lay out their resources to better and better advantage.

#### INTERMEDIATE AND LEAVING CERTIFICATES.

The number of those who gained the intermediate certificate once more shows a highly satisfactory increase. The total number of such certificates awarded was 5,657, as against 5,458 in the preceding year.

On the other hand, in the year 1916 the leaving certificate was gained only by 1,569 pupils, as against 1,596 in the preceding year. This continued downward tendency is unquestionably due to the cause which produced last year's decline—the increase in the number of girls who successfully completed the course was insufficient to compensate for the drain of lads to the Army. It is perhaps desirable to mention that we are keeping a careful watch upon the educational interests of those who have thus sacrificed the last few months of their school career in order to serve their country. School managers have been given to understand that it is open to them to submit to the Department the record of any pupil on his return to civil life, when an endeavour will be made to accord him full and just recognition of his school training and attainments without too rigid an insistence upon the requirements and methods that are applicable in normal conditions.

#### IMPORTANCE OF THE STUDY OF ENGLISH.

Among the various subjects of instruction we regard the study of English as of the most fundamental importance. This continues to be developed along lines followed in recent years, and progress is steady, slow. A marked rise in the average level of literary appreciation is characteristic of the past two or three decades. The department in which most still remains to be done is perhaps in the acquisition of proper facility in the use of the mother tongue, whether in speech or in writing. The study of history has naturally derived a certain stimulus from the extent to which teachers and pupils have come to realise how rapidly it is being made before their eyes. Geography again, is still benefiting from the impetus which has received through the gradual spread of sounder conceptions as to its possibilities and as to the best method of treatment.

#### LANGUAGES IN THE CURRICULUM.

In regard to languages other than English we have little that is novel to report. Latin continues to be taught extensively, and in many cases most successfully taught, the chief weakness observable being a tendency on the part of teachers to take too light a view of the initial difficulties, and consequently to cut down unduly the amount of time which they devote to laying foundations. The number of pupils taking Greek is small, but the quality of the work which they do appears to be excellent. The popularity of French remains unabated, and on the whole it may be said that the character of the work accomplished is increasingly satisfactory. Much, however, has still to be done before the average level of achievement is as high as is reasonably desirable. The numbers taking German remain about stationary, but the quality of the work is improving. One or two schools provide systematic instruction in Spanish, and public opinion seems to be preparing itself for further developments in this direction. We have this year introduced a higher grade paper in Gaelic into the leaving certificate examination, and the hope may be expressed that the step will have as its immediate result a quickening of interest in the scientific study of this part of Scotland's linguistic inheritance.

## MATHEMATICS AND SCIENCE.

The importance of mathematics as an element in the secondary-school curriculum will assuredly not be lessened by the demand that is now being made for greater attention to the practical side of education. In Scotland, however, the subject had already taken a firm hold that it stands in little need of further strengthening. Where watchfulness is called for, it is lost too much is made at the school stage of the purely theoretical aspect of the instruction with a consequent excess of mental gymnastic. This applies especially to such a homely, everyday branch as arithmetic. For ten to fifteen years past experimental science has formed a regular portion of the intellectual discipline of all intermediate and secondary school pupils in Scotland, with results that must be described as distinctly gratifying. If, however, the universities are to be fed, as they ought to be, with recruits qualified for training for the research work that the future will demand, there must be an increase in the number of those who take a full post-intermediate course in one or other of the branches of science that adapt themselves to effective school treatment.

## DRAWING AND MUSIC.

Drawing, like science, is now a subject which every intermediate and secondary school pupil studies for at least three years, and here again the disciplinary results have afforded matter for real congratulation. The more specialised side of the study of the subject, moreover, being cultivated with increasing zeal, much of its vitality being derived from the close contact which we are endeavouring to maintain between the secondary schools and the central institutions. We are particularly pleased to note the steady rise in the efficiency and educational value of the instruction given in music. The requirements at the leaving certificate examination are exacting and the number who comply with them will probably always be small. But the effect produced by the admission of the subject to its present status has not by any means been limited to the few candidates who were actually presented; everywhere there is clear evidence of the beginnings of a wider appreciation of the value of musical culture.

FREE SECONDARY EDUCATION.<sup>1</sup>

HAVING made some provision for creating an adequate supply of teachers, and having also provided for an increasing grant in future years in order to meet other educational requirements, Mr. Fisher has not lost no time in laying before Parliament and before the country, in the form of a Bill, his proposals respecting what those educational requirements shall be. Speaking for myself, I welcome the Bill as promising a great instalment of the reforms which have for many years been advocated from the platform and the floor alike at class-teacher conferences and at the Easter conferences of the N.U.T. The Bill will have its enemies, those who will seek to destroy it; some be-

cause of what it does contain, some because of what it does not contain. Mr. Fisher has been congratulated from many quarters because he has succeeded in avoiding the risks and whirlpools of religious and sectarian animosity. But has he? Some of the clergy have recently displayed an unfortunate recrudescence of that zeal for the schools which means intolerable and unwarrantable interference with the teachers in their work. Again, true educationists, in their zeal, are preparing attacks because the Bill does not go far enough, does not contain this or that provision which, to their minds, is highly desirable.

I have said that I regard this Bill as an instalment of the reforms that are necessary to secure a complete national scheme—a large instalment. I question if the introduction of any new and extensive proposals would not overload the Bill. Better bring a reasonable cargo safe into port than sink an overloaded vessel beneath the troubled waters.

It is, then, with an eye to the years to come, and in the hope that the reforms now proposed will pave the way to yet further improvements in the near future, that I venture to offer a few observations upon what I consider to be a change which is a necessary condition to the realisation of the highest ideals for the true education of the youth of this country.

If this England of ours, this mother of nations, is to be peopled with a race of healthy, happy, and prosperous men and women, if the people to whom it has given birth are to remain in the van of progress and real civilisation, care must be taken for the whole of the nation, not for one section or for another, no more for the rich than for the poor, and no more for the poor than for the rich. The vast conflict of nations in which we are engaged is being waged for the triumph of the spirit of democracy, and if its results are to mean anything for us, anything at all worth the sacrifice of the flower of our young manhood, anything that shall in any way atone for the great outpouring of blood and tears, we must emerge from it a real democracy, a common people, a brotherhood of man. All this means that there must be for all equality of opportunity; of opportunity for wealth, for power, for culture, for learning, and, above all, for happiness. This can only be secured by giving equal educational advantages to all the young bodies and minds and souls that are growing up around us. To me it seems that this means one thing, the common school. If the nation is to grow into one harmonious whole, fit for its place in the brotherhood of nations, why continue to segregate the youth of the nation? We want only one kind of training for the child of the peer—the best. We want only one kind of training for the child of the peasant—the best. The community into which a child is born has a right to expect from the child the best that can be given when that child becomes a man; and the child has the right to claim from the community the best that the community can give, a free and full opportunity for the development of every faculty for good which lies dormant within its young heart and mind.

All this equality of opportunity cannot be secured so long as there is one kind of school for the child of the poor, another for the child of the moderately

<sup>1</sup> From the president's address to the National Federation of Class Teachers, delivered by Mr. G. H. Powell at Leicester on September 29th, 1917.

well-to-do, and still another kind for the child of the rich. The education given in these varying types of schools during the earlier years when the foundations are being laid is, or should be, much the same. The difference between the schools is in the main a social difference. The real reason for sending a young child to a so-called secondary school is not because the education given there is of a superior type, but because of the social advantages which are supposed to be derived from attendance at such establishments; and often still, perhaps, in the case of the children of the middle classes because candidates for appointment in the public services, in banks, and in the higher ranks of industry are drawn almost exclusively from such schools. No matter if the boy from the elementary school is a lad of great intelligence and capable of rendering worthy service to the community, he has not (save in rare cases) the opportunity for giving that service, because he does not bear the hall-mark of the secondary school. What an infinite waste of real brain power and sterling worth! The elementary schools and their products are despised, and will be so long as they are reserved for the children of the workers. But if the children of all classes began their school-life in these schools they would be no longer elementary, but primary, schools; and the parents of those attending them would see that they were provided with the very best of everything needed, premises, apparatus, and teachers--especially teachers. There would be no more large classes, no more cramped curricula, the golden age for these schools would have begun.

Many parents quite honestly dread the influence of the council school. If what they fear is that their children may learn to speak vulgarly and to behave badly, they have not realised that the home is the place where, in the main, habits of speech and personal conduct are imbibed, and if they fear for their children it is the home influence that they really distrust, not that of the school. If, however, what they fear is vicious and evil companionship, that is liable to be encountered in all types of schools; a child is not necessarily evil because it is poor; and schools through which the wind of public control and inspection sweeps are at least as likely to be free from vice as those which are more securely walled-in, and the doings in which are not matters of common knowledge.

The institution of the common school is the basis of a really free system of education. Experts in this country are ceasing to talk of the educational ladder; it is too narrow a term to express what they desire. We now speak of an educational highway. To obtain this in its fullest sense it will be necessary that we shall have free secondary or high schools.

When we examine our system of publicly provided and controlled schools for more advanced pupils two facts stand out clearly. Too many places in these schools are occupied by fee-paying scholars who have not the necessary brain power or intelligence to make the best use of the training given, and too few places are available for those poorer children whose intelligence fits them to benefit fully from the longer course of study in the higher branches of knowledge which

is there provided. Thus public money is wasted upon unsuitable pupils and withheld from those who would, by reason of their capacity to benefit return a real interest by increased usefulness to the community and by more efficient and intelligent service to the State. There does not appear to be any valid reason why the ability to pay a small portion of the expense entailed in the education of a child should command a right for that child to receive such education in any type of school provided at the public cost. Capacity to benefit by the instruction given in any publicly maintained school is a logical claim to be allowed to attend that school, and there is no other claim which is entitled to compete with it.

In a report upon the French system of higher primary schools issued by the Board of Education for 1896-97 we find this passage:—"No child may be admitted into the higher primary schools unless he has obtained the certificate of primary instruction and has passed a year in the highest standards of the elementary schools; or, in the case of children educated privately, can prove attainments equivalent to both these requirements." The object of this limitation is to exclude all children who, being intellectually unable to profit by the higher instruction given, would fail to repay to the country by their improved talents and industry the value of the public funds that would be spent upon them.

In America education is free for all who have the desire and the capacity to benefit by it, from the primary school to the university. In Baltimore there are two schools, the Boys' High School and the Girls' High School, which together accommodate 2,200 pupils. Both these schools are fed directly from the elementary schools. The high character of these institutions can be judged from the fact that the graduation certificate of the former is accepted by the Johns Hopkins University as entrance for the undergraduate course without examination.

In America, as in France, the passport of admission into a higher grade of school is the graduation certificate of the school below.

There are, however, some encouraging words for those of us who desire the reform I am now discussing to be found in Mr. Fisher's speech in the House of Commons on April 19th. He said:—"I have little doubt that in spite of the considerable provision of free places and scholarships which is already available, further assistance both from the central and from the local authorities is required to place the advantages of secondary education within the reach of all children who are able to profit by it." He also said:—"The establishment of a system of free secondary education is an ideal with which I have very great sympathy." Considering that in the large majority of cases the fees paid for tuition in secondary schools are but a small proportion of the total cost of the education given to the pupils on whose behalf they are paid; that the bulk of the money needed for the maintenance of publicly provided secondary schools comes out of the public purse; and that according to Mr. Fisher's own estimate a further contribution of £1,000,000 per year would make our secondary schools free, it is to be hoped that it will be

sible for him in the not distant future to realise ideal with which he now feels only at liberty to press his sympathy. Further, when we find that there are in the secondary schools on the grant list England and Wales 35,666 children under twelve years of age, 15,104 of whom are under eleven years, understand what a misnomer "secondary school" is to be for some of these expensive institutions; for thousands of boys and girls must in the nature of things be receiving primary education and should be in the common primary schools. Since only 4,632 children under twelve years of age are occupying places in the secondary schools, it appears that 31,034 children under that age, or about one-sixth of the total number of pupils in the schools receiving large grants from the public purse for advanced education, there by virtue of paying a fee—generally a relatively small fee—when they should be in a primary school. They have shown no capacity to benefit by the education given in a secondary school; they are therefore the result of an illogical claim, and they are taking places of other children a little older than themselves who could establish a real claim by graduating in the common school. From all these facts it appears that there is a lamentable waste of public money, and an equally lamentable neglect of available talent.

The extra £1,000,000 per annum would be a sound investment on the part of the nation. It would bring rich reward in more intelligent and efficient workers, more enlightened and useful citizens.

Let us, then, have the common school with an equal right for all, and from that school let the children pass, according to his several ability, into a wide range of schools, differing in type and in curriculum; and let these schools be free. So will the nation benefit on economic and on commercial grounds. But, better still—best of all—so shall the people be a happier people; for the happiness which arises from culture (the pleasure derived from literature and the arts) is the birthright of any one section of the community, and is the greatest blessing bestowed on man by a merciful Creator freely given to rich and poor, high and low, for the general uplifting and ennobling of the race.

## ITEMS OF INTEREST.

### GENERAL.

In the House of Commons on October 19th the Chancellor of the Exchequer announced that "he regretted it would not be possible to pass the Education Bill this session," and he would not promise a day for a second reading of the Bill, "unless there was a prospect of passing the Bill." All who have the educational well-being of the country at heart will be seriously disappointed at this decision. We still hope, however, that the Government may be able ere long to take steps to embody the chief provisions of Mr. Fisher's Bill in an Act of Parliament.

THE Regulations for the Training of Teachers for Elementary Schools, which came into operation on August 1st, 1915, have been modified as follows:—If a student has interrupted his course at a training

college for military service, the Board may pay a further grant for such complete number of years as may be required to enable him to complete the course of training originally approved for him, notwithstanding any proportionate grant for an incomplete year of training which may have already been paid." Subject to two minor alterations, parts i.-iii. and v. of the Regulations for Technical Schools, etc., in England and Wales for the school year 1917-18 will be the same as those of last year.

MR. FISHER concluded his September tour in Lancashire with his speech at the Free Trade Hall, Manchester. His courageous and convincing defence of the Education Bill and his outspokenness on the abolition of the half-time system make excellent reading. Our readers will find the speech in the *Times Educational Supplement* for October 4th. The President of the Board of Education told his audience:—"I adhere firmly to the opinion that children under fourteen should not go into the mills. It appears to me to be demonstrated beyond all reasonable doubt that in spite of all the consideration which the employers of half-time children exhibit in the management of their mills, the result of this arrangement is bad for the physique and education of the race. It appears to me that the time has now come when the State must definitely make up its mind whether a plan shown to be injurious to the health and education of 30,000 children is to be permitted any longer to continue." Lancashire will not be able, we hope, to resist the appeal of Mr. Fisher's peroration:—"As I end this address, I am reminded of an occasion not sixty years ago when Lancashire made a great decision overthrowing for one of the abiding causes of the human conscience the clear and immediate dictates of pecuniary advantage. In the struggle between the Northern and Southern States of America, at a time when considerations of the pocket would have suggested adherence to the slave-owning interest, the voice of Lancashire was raised for freedom. The issue now is different, but not dissimilar. You are not asked to make sacrifices for the status of unfree aliens in a distant continent, but at the price of some real, though temporary, inconvenience to raise to a higher plane the moral and intellectual prospects of your own children. I do not doubt what your election will be. I do not distrust your instinct or question your wisdom. For a time the needle of your judgment may quiver, but then it will settle and point the end steady to the pole-star of hope."

THE inaugural meeting of the Anglo-French Society was held at the Holborn Restaurant on October 15th under the chairmanship of Lord Burnham. The reason for its existence became apparent at the Entente Committee—a body of which Sir Henry Newbolt is the chairman—where it was found that, although there were Anglo-Russian, Anglo-Rumanian, and Anglo-Serbian Societies, there was no Anglo-French Society. It is true there exist the Alliance Française, the Entente Cordiale, and the Modern Language Association, but these cover only parts of the field that the new society hopes to do. There will be, if sufficient support is given to it, rooms in London where members can meet, and during the com-

ing winter lectures are to be given by Mr. Edmund Gosse, Mr. Laurence Binyon, Mr. W. L. George, Prof. Paul Mantoux, M. H. D. Davray, and others. A sister society—*La Société Franco-Britannique*—is being founded in Paris, which will welcome English members when they travel. As Mr. Gosse said at the meeting, it is necessary to have not only a political and an economic *entente*, but an intellectual one as well. The study of French must be made compulsory in all our schools, as no doubt English will be made in France. There must be an exchange of professors, and students between the universities of the two nations that complement one another so perfectly, and, above all, there should be travelling scholarships and bursaries to enable both teachers and pupils to spend regular periods in France, and get to know our best Allies better. The future of the world depends on the alliance between France, the home of ideas, and the Anglo-Saxon races, who will turn those ideas into practical channels. All particulars of the new society may be obtained from the secretary at 8 St. Martin's Place, W.C.2.

THE Duty and Discipline Movement, which aims at rendering easier the work of teachers and parents by combating indiscipline and slackness in the school and in the home, is starting a new campaign among teachers. The movement, which has its headquarters at 117 Victoria Street, London, S.W.1, numbers among its vice-presidents more than a hundred and fifty men and women distinguished in English public life.

THE committee of the Modern Language Association has issued a memorandum on the Board of Education's proposals for advanced courses. The committee is of opinion that the course of instruction in modern studies for pupils who have passed the general school examination should lead up to a higher school examination, in which it should be possible to take any of the following alternatives:—

A. Two modern foreign languages and the outlines of a period of European history (one section of the subject of modern history).

B. The English language and one modern foreign language and the outlines of a period of English history and of a period of European history (two sections of the subject of modern history).

C. The English language and modern history, with two subsidiary foreign languages (at least one of which should be modern).

THE committee regrets that the Board of Education in the Regulations for Secondary Schools makes no provision for the study of English in its scheme of advanced courses, and believes that this may react unfavourably on the development of modern studies, as there are many schools which have specialists capable of giving competent instruction in English, in modern history, and in one modern foreign language, but no specialist who can take advanced work in two modern foreign languages. The Board of Education suggests the advanced study of a modern foreign language and of Latin as a possible alternative. The committee recognises that it is advisable, and perhaps essential, that those taking up modern studies should have a

good reading knowledge of Latin. This, however, is a different thing from the "advanced study" of Latin, and it deserves to be pointed out that the Board of Education Regulations state that the advanced courses are intended to lead up to honours work at a university, but that there is no honours course at any English university in which Latin and a modern foreign language are combined as main subjects.

No civilised nation can afford to allow its high education to cut the cables which vitally connect modern life with the broader aspects of the life of ancient Greece and Rome. Educational reconstruction demands, not that we should jettison these human subjects of antiquity, but that, in order to make more vivid appeal to the imagination, we should improve our method of presentation. Among such improved methods is the proper use of archaeological aids. There exists, though not widely enough known among teachers, an organisation the object of which is to help this imaginative appeal, and it is the only one of its sort in England, though Ireland and the United States have for some time benefited by well-managed schemes. The Association for the Reform of Latin Teaching, the president of which is Dr. W. H. Rouse, at its summer meeting at Cambridge in 1916, established an Archaeological Aids Committee, with Prof. Henry Browne, of Dublin, as president, and Mr. S. E. Winbolt, of Christ's Hospital, as honorary secretary. For the past four years it has done work which has been highly successful, and much appreciated by the limited number of schools that have come to know of it. Its function is to circulate among schools a loan collection of archaeological material illustrating ancient classical history, literature, and life. Coins, pottery, pictures, photographs, and models can thus be used by teachers and pupils for adequate periods for a small subscription. It can scarcely be realised by any who have not availed themselves of such aids how potent is the stimulus they provide. It is true we have grown more or less used to tangible and visible helps to education so far as kindergarten instruction is concerned, but comparatively few teachers have grasped fully the psychological principle that for youths and adults also seeing—and handling—is believing. The Archaeological Aids Committee is now beginning the fifth year of its work, particularly of which may be had from Mr. S. E. Winbolt, Christ's Hospital, West Horsham, Sussex.

BOMBAY Province has a population of twenty million; there are seven colleges, 111 high schools, and nearly ten thousand primary schools. The enrolment of the colleges, in the year 1915-16, was 4,702; that of the high schools, 37,706; and that of the primary schools, 588,790. The degree examinations at Bombay University for the year were, according to *Indian Education*, attended by more than a thousand candidates; for M.A., 83 passed out of 190; for B.A. 481 out of 754; and for B.Sc. 34 out of 53. This preponderance of arts students will, no doubt, be largely reduced as the need for scientific training is more largely realised. There are signs that public opinion in India is gradually recognising the necessity for science in connection with the daily life, the commerce, and the industry of the

gressive people. The degree examiner in English cements upon the extraordinary carelessness of the majority of the candidates. The number of high schools is proportionately small, and the financial situation does not promise any immediate improvement. But efforts are being made to improve the primary school teaching of drawing. Not the least of the difficulties to be encountered lies in the apathy both of local authorities and headmasters. Drawing lessons are, in one case, discontinued immediately after the visit of the inspector.

SOME time ago, after a visit from the late Prof. J. Herbertson, a branch of the Geographical Association of England was established at Cape Town. It did not have a long or a vigorous existence. A South African Geographical Society has, we are glad to note, been recently founded at Johannesburg largely as a result of the support of the staff of the School of Mines, ten of whom have promised popular lectures. This society has a much better chance of prosperity than the old one, and is a reminder of the enthusiasm for education which exists in Johannesburg.

In our review last month of "A Lasting Peace, &c." by J. J. Rousseau, edited by C. E. Vaughan (unstable, 2s. net), it was stated that Prof. Vaughan's new and scholarly edition in two volumes of all the critical writings of Rousseau was published by thearendon Press. This was a mistake; the volumes were published by the Cambridge University Press.

#### SCOTTISH.

This year's annual meeting of the Educational Institute of Scotland is likely to become an historic one, for there was consummated the long-looked-for union which has brought all the diverse professional associations of teachers into one fold. The Educational Institute has always claimed to be representative of the whole teaching profession, and throughout the early part of its history amply justified its claim. But usually one body of teachers and then another came to the conclusion that they could further their own interests better by setting up independent associations. These separate associations had, however, been moving on converging roads, and members had gradually come to see that the things that divided them were much less than those that united them, and they had at last come together and were prepared to march forward for the future on a broad common educational highway. The union meeting was held within the historic precincts of Moray House, Edinburgh, and the setting of the scene was not unworthy of the occasion. Notwithstanding the difficulties of travel at this time, the crowded audience was representative of all that is best in the educational life of the whole country. On the platform, in addition to the leaders of the existing associations, were the Secretary for Scotland, the Lord Provost of Edinburgh, and the Principal and several of the professors of Edinburgh University. It was fitting that Mr. M'Callum, convener of the committee which carried through the difficult and delicate negotiations for union, should occupy the chair and move the resolution which brought the labour of years

to a satisfactory close. Thereafter Mr. Strong, rector of the Royal High School, Edinburgh, was called to the chair as the first president of the united association. There was a peculiar fitness in this election, as it was a rector of the Royal High School who occupied the chair at the inauguration of the Educational Institute in 1847.

THE Right Hon. Robert Munro, M.P., Secretary for Scotland, congratulated the teachers of Scotland on the step they had just taken. The time and the place and the manner of the union were all significant. They were standing on the threshold of a new and a better era in Scottish education, because the public mind was impressed as never before by the importance of education. War, the sternest of all teachers, had proved conclusively that with an educated populace anything was possible. As regards the place, it was impossible to conceive one more inspiring than the ancient building round which clustered such hallowed and fragrant memories in Scottish history. He welcomed the union on behalf of Sir John Struthers and the Education Department, because they would now be able to obtain the collective, authentic, and authoritative opinion of the teachers of Scotland. Mr. Munro said that he had been intimately associated with teachers from his earliest years, and many of the intimate friends of his youth were country teachers. Sir J. Lorne MacLeod, Lord Provost of Edinburgh, and Sir Alfred Ewing, Principal of the University, congratulated the teachers on the spirit of sweet reasonableness which had brought them together, and expressed the hope that their efforts would be directed to still further advancing the highest interests of the nation.

THE Scotch Education Department has issued to school managers a circular directing their attention to the conditions governing the allocation of the new educational grant, and to the considerations they should have in view in distributing it among their teachers. As regards the former, the sum is made up of a *per capita* grant, according to the number of qualified teachers under each authority, augmented (1) by the sum necessary, in the case of authorities with a school rate in excess of 1s. 6d. per £, to bring the average salaries of teachers in their employ up to £112; (2) by a percentage of the collective salaries of the intermediate and secondary teachers in their schools. School authorities under which the average salary is less than £112, and the school rate under 1s. 6d. per £, will be required to make up the salaries to this average before sharing in the grant. The method of distributing the money among the various members of the staff is left to the school authorities, with the recommendation that due consideration should be given to the improvement of the salaries of those who have attained a certain length of service and proved their capacity as teachers.

LORD HALDANE'S addresses on education have a perennial freshness. No man of our time has spoken more frequently on this subject, yet he has always something new and striking and stimulating to say. His latest address to the Workers' Educational Association in Edinburgh served to show once more "his

infinite variety." To be educated, he said, meant to be able to hold communion with the highest and best in science, literature, art, and religion. In Scotland the graces—that is, the artistic element in education—had been too much neglected. But form can never be separated from substance, and it was impossible to reach the highest excellence until the form of education was as good as its substance. North of the Tweed the substance of education was incomparably better than in the south, whereas the form was distinctly poorer. If they could add English form to Scottish substance they would have an ideal combination.

DR. MORGAN, Principal of the Provincial Training College, Edinburgh, speaking at the opening of the East Lothian Mining and Technical School, Tranent, gave utterance to some home-truths which will not please those self-satisfied educationists who think that everything is well with Scottish education. Dr. Morgan declared that during recent years England and Wales had been making greater progress than Scotland, especially in secondary, technical, and university education. The Education Act of 1902 had given an enormous impetus to education in the south. There was a ferment at work there that had no counterpart in Scotland, but they looked with confidence to the forthcoming Education Bill awakening Scotland from its educational self-complacency and inaugurating a new era of progress in the schools.

MR. G. W. CURRIE, M.P., in addressing a meeting of Leith teachers, said that there was a disposition in some quarters to cavil at the precedence given to the English Education Bill, but he believed that the slight delay that would be thus produced would be more than compensated for by the experience to be gained from the discussions of the English problems. He strongly deprecated premature specialisation in school, and said that the poorest of all kinds of early specialisation was that in commercial subjects. This might produce an inferior type of office boy; it would never produce a man of business. Speaking of salaries, he said that for the last twenty years the remuneration doled out to nine schoolmasters out of every ten was in itself evidence that there was a good deal of humbug and lip service going about as to the value to be attached to education.

THE Joint Committee of the Scottish Provincial Committees for the Training of Teachers has unanimously approved of the following resolutions:—(1) That the present conditions in the teaching profession constitute a grave menace to the efficiency of national education; (2) that to make the teaching profession attractive to men and women of the class desired, it is necessary that reasonable rates of remuneration and adequate salary scales should be established throughout the country. The committee further recommended that the junior system should be abolished, and that all intending teachers should be required to take a course of secondary education and obtain some form of school-leaving certificate. It was also agreed to recommend that the training college course should be

readjusted as regards duration, subjects of study, and practical training.

THE scheme of superannuation devised by Sir William McCormick's Committee for the newer universities in England is to be extended to university lecturers in Scotland. The principle of the new scheme is that the contributions should be on a 10 per cent. of salary basis, half being contributed by the lecturer and half by the university. The Carnegie Trust is said to be prepared to reimburse the universities in whole or part for their expenditure under this head. In view of the utterly inadequate salaries of these lecturers, the proposed course would be for the universities to take over payment of the whole 10 per cent., and look to the Carnegie Trust to make a liberal contribution towards this. There is already in operation a superannuation scheme for Scottish professors on a non-contributory basis, and no good reason can be advanced for giving lecturers any worse terms.

#### IRISH.

THE exhibition and prize lists of the Intermediate Education Board are published this year, as last, without the names and with only the numbers of the successful candidates. They may be summarised as follows:—

Boys.						
Senior Grade.						
Group	First Cl. Exh.	Second Cl. Exh.	Prize £3	Prize £2	Prize £1	Total
Classical	6	6	5	5	5	27
Mod. Lit.	5	7	5	5	5	27
Mathem.	1	1	3	—	1	6
Science	4	7	5	4	6	26
Middle Grade.						
Classical	6	8	17	2	6	39
Mod. Lit.	6	8	10	10	11	45
Mathem.	6	8	12	8	6	40
Science	6	8	10	10	10	41
Junior Grade.						
Classical	10	15	20	6	4	55
Mod. Lit.	11	16	21	21	23	92
Mathem.	11	15	21	21	23	91
Science	10	15	21	21	23	90
All Grades.						
Classical	22	29	42	13	15	121
Mod. Lit.	22	31	36	36	39	104
Mathem.	18	27	36	20	30	140
Science	20	30	36	35	39	160
Total	82	117	150	113	123	885

GIRLS.						
Senior Grade.						
Classical	1	—	—	—	—	1
Mod. Lit.	3	8	7	9	12	39
Mathem.	2	2	—	—	—	4
Science	2	6	1	2	—	11
Middle Grade.						
Classical	1	—	—	—	—	1
Mod. Lit.	11	16	9	10	12	58
Mathem.	—	2	1	1	—	4
Science	1	9	4	5	3	22

Junior Grade.						
First Cl. ssical	Second Cl. ssical	Prize £3	Prize £2	Prize £1	Total I	
8	11	15	13	17	64	
9	10	7	—	3	29	
7	11	6	8	10	42	
All Grades.						
2	1	—	—	—	3	
22	35	34	32	41	161	
11	14	8	1	3	37	
10	26	11	15	13	75	
Total	45	76	50	48	276	

The value of the first-class exhibitions is £30 in the Junior Grade, £20 in the Middle, and £15 in the Senior, and of the second-class exhibitions £20 in the Senior, £15 in the Middle, and £10 in the Junior. The number and value of the awards are both slightly higher this year than last. The amount spent per year is as follows :—

## BOYS.

	Senior Grade £	Middle Grade £	Junior Grade £	Total £
Exhibitions	... 960	960	1,240	3,160
Prizes	... 99	238	566	903

## GIRLS.

	Senior Grade £	Middle Grade £	Junior Grade £	Total £
Exhibitions	... 560	665	690	1,915
Prizes	... 58	87	156	301

THE Intermediate Board has just published its report on the expenditure of the £40,000 grant (Teachers' Salaries, Grant) for last year. The total number of intermediate schools is 350, and of intermediate pupils as defined by the rules of the grant 12,242. Of these, 229 schools with 13,204 pupils are under Roman Catholic management, and 121 schools with 5,920 pupils are under non-Roman Catholic management. In the former (Roman Catholic) class the number of duly qualified lay teachers is 164, and in the latter (non-Roman Catholic) 295. In the Roman Catholic schools there are 288 lay teachers who do not fulfil the conditions as to tenure, salary, etc., and in non-Roman Catholic schools there are 420 such teachers. The number of qualified lay teachers in Roman Catholic schools has risen from 125 in 1915-16 to 164 in 1916-17, and in non-Roman Catholic schools from 273 to 288. The proportion of qualified lay teachers in Roman Catholic schools is still far below that of one to every forty pupils; it is, in fact, only one to every eighty, while in non-Roman Catholic schools it is one to every twenty. The highest salary paid to a Roman Catholic lay teacher is only £165, less than half the highest paid to a non-Roman Catholic assistant lay teacher.

IRELAND has been promised this autumn an Act of Parliament for the distribution to secondary schools the equivalent of the new Fisher grant. It is stated that the amount will be £48,000, which takes no account of the much larger Treasury grant already paid to secondary schools in Great Britain, for which Ireland has never received any equivalent, and it is therefore far below what she is entitled to receive. She will nevertheless be thankful to receive this not considerable sum. It will, however, provide for no

heroic measures in the way of sweeping reform, and it is better to take what can be easily obtained than to endanger everything by contentious legislation, such as a large measure of reform would undoubtedly entail. It is further stated that the £48,000 will be expended partly in summer courses for teachers, and partly in capitation grants to the intermediate schools.

THE Department has issued an explanatory circular concerning its programme of experimental science, drawing, manual instruction, and domestic economy for day secondary schools. It states that it has under contemplation a complete revision of the conditions under which grants will be made for instruction in these subjects after the current session. The revised programme will be issued to managers at as early a date as possible.

## WELSH.

IT is difficult to say whether more attention is just now given in Wales to Mr. Fisher's tour and his proposals or to the reception to be accorded to the suggestions of the Llandrindod Conference for the constitution of the proposed National Council of Education. The recommendations of the Executive Committee of the conference are now under consideration by the local authorities; the chief objections that have so far been raised are those made by the large towns of South Wales. Barry Education Committee unanimously supported the plan; Cardiff decided, by the casting vote of the chairman, not to send delegates to the executive; Newport was dissatisfied with the scheme because it was not plain how the town would be affected in the matter of rating; Swansea appears to be in favour of an *ad hoc* authority directly elected. It may be useful to set down, without attempting to assess their value, some of the heads of the controversy :—

(1) It is urged that Wales is not a mere geographical expression, but a nation, with national aspirations, a national language and literature, and a national character; therefore a mere provincial council, one of such a series as has been proposed in the scheme with which Lord Haldane's name has been associated, will not satisfy its needs. To this it is answered that no boundary—national, linguistic, or geographical—can be assigned to Wales; that 56 per cent. of the population speak no Welsh, and only 9 per cent. no English; that when full provision has been made for the teaching of the Welsh language, history, geography, literature, and folklore, that which is good in the teaching of other subjects is good alike for England and for Wales, and that each should have the benefit of the other's views, knowledge, and methods.

(2) A National Council would be able to secure adequate financial treatment; Wales is quite capable of controlling its own educational expenditure, but must have much more money to spend; for every shilling spent by the ratepayers Parliament contributes 1s. 4½d. to Wales, but 13s. 1½d. in the case of Ireland. In reply, it is urged that Imperial grants would involve Parliamentary control, and not the autonomy which is claimed for Wales; moreover, Ireland by no means accepts the correctness of the comparison (SCHOOL WORLD, September, 1917, p. 320).

(3) Welsh education could be unified and its present

"chaotic condition" remedied. Against this it is urged that while elementary education is under the single system that applies also to England, *plus* special attention to Welsh needs, Wales has already been priding herself on the simplicity and efficiency of her secondary education. One section says that what has so well succeeded under the Central Welsh Board will not fail under a National Council; another says, "No more Central Board, but an authority elected by the people!"

THE view of the actual educators, as distinct from the "educationists," is that the whole controversy is not educational, but political—in fact, many of the advocates of a National Council only support it because they see in it an instalment of Home Rule for Wales. The teachers care little whether they are ruled from Whitehall or from some Welsh centre so long as they are enabled to go on properly with their work of making out of the available material the best possible men and the best citizens. So far as a National Council will help them in this they are prepared to support it; but its only educational business is to bring them the children and to see that the teachers are given proper facilities for their work. The teachers are certainly not prepared to accept any arrangement that will raise a barrier against free migration to and from Wales, without loss of rights and status in the matters of tenure, salaries, and pensions.

THE speeches made by Mr. Fisher during his Welsh tour have generally consisted of two parts, the first dealing with the impressions he had received of Welsh educational matters and the conclusions he had reached as to the best methods of furthering their progress, and the second consisting of an exposition of the policy embodied in his Education Bill. This exposition resembled nothing so much as an admirable model lesson, and contained very little more than anyone of ordinary intelligence could obtain from a perusal of the text-book—the Bill itself. The teacher was probably absolutely right in taking it for granted that two-thirds of his class had not read, or at least had not mastered, the subject-matter of the lesson.

A SOUTH WALES paper says that the newest style in fur coats is called "Fishergrants," because so many teachers are ordering them for the winter on the strength of their increased salaries. If this statement is intended to convey the impression that the grants are likely to enable teachers to indulge in extravagant luxuries, the sooner that impression is corrected the better.

OVERHEARD in the queue of the ticketless, before the opening of the doors at a Fisher meeting:—"They ought to have sent tickets to the schools; they have been requiring names and addresses before they would issue them." "Well — and — got them." "Yes, it's the tame teachers that got the tickets."

SAYD a wicked delegate in the train, on the return journey from Llandrindod: "Did you hear — say he hoped the council would remember it was a Welsh National Council—with the accent on the 'National'? Well, now, I'll tell you what it is—y mae arnom ni eisieu 'educashion,' with the accent on the *cash!*!"

## STANDARDS OF EDUCATIONAL ABILITY.

*The Distribution and Relations of Educational Abilities.* Report by the Education Officer of the London County Council, submitting three Memoranda by Mr. Cyril Burt. 93 pp. (P. S. King.) 2s. 6d.; free 2s. 11d.

WE have frequently directed the attention of our readers to the work which is being done upon educational problems, both in this country and in America, by the methods of statistical and experimental research. But we do not remember to have done with greater satisfaction than in the present instance in which Mr. Cyril Burt's memoranda, introduced and commended by the Education Officer of the London County Council, claim our notice. The problem dealt with is of great practical importance; and every page of the book is marked by painstaking thoroughness, extreme caution, and, in short, by the true spirit of scientific inquiry. We may say at once that the reader whose habit of mind is not scientific is unlikely to be attracted, but even he should be interested in the broad results, as set forth in Sir R. Burt's introduction and in Mr. Burt's own summary.

Mr. Burt's chief object is "to present a preliminary estimate of the distribution of educational abilities among children of ordinary elementary schools and special schools for the mentally defective." To most readers of THE SCHOOL WORLD the normal child is more direct practical concern than the mentally defective. But it is a matter of general interest that the educational attainments of a child technically known as "defective" correspond, on an average, with those of a "normal" just over half his age. Special schools for children are, we also find, distinguished from those in ordinary schools by "educational deficiency" rather than by general intelligence, and are perhaps to be regarded primarily as school failures, and not always therefore as mentally defective in the narrow sense. They are not, that is to say, absolutely deficient in intelligence, but only in the particular sort of intelligence which the bulk of the usual school curriculum is calculated to reach and to develop.

Mr. Burt interprets "educational attainments" in terms of the now obsolescent "standards" of elementary-school instruction. Notwithstanding its convenience, we regard this as one of the most unsatisfactory features of the whole investigation. Many persons who would be interested in the inquiry will not know what these "standards" are, and those who know them will be the first to shake their heads at being asked to accept them as satisfactory standards of real attainment. However, waiving this objection, we find, to use Mr. Burt's mode of expression, that for the normal child, standard=age-6, so that, for example, a child eleven years old is normally in the fifth standard. But Mr. Burt's investigations, carried out in the elementary schools of a representative metropolitan borough, give all the definiteness of hard facts and figures to what every teacher knows, that classification according to age is perfectly futile. To take a particular instance, of 3,000 children examined at thirteen years of age, nearly 38 per cent. were in the "modal," or prevalent, or normal class for that age, but 25 per cent. were a year behind, 14½ per cent. two years behind, 8 per cent. three years behind, and 2 per cent. four years behind, whilst nearly 10 per cent. were a year in advance, and about 2½ per cent. were two years in advance.

Thus consecutive age-groups overlap extensively. The overlap, says Mr. Burt, is greatest in single subjects taken separately, and especially in those subjects which depend more upon native aptitude than upon

quired knowledge. Even in general educational history the overlap is very considerable. "Hence, to be homogeneous in educational ability, a school class must be heterogeneous in age. It should embrace a range about five years."

To the secondary-school teacher, accustomed to a sensible scheme of promotion, these findings will cause surprise. Perhaps the elementary-school teacher will also experience little surprise, but for various reasons he has been so much hampered by a stiff scheme of promotion by age that he will be especially liable to have the weight of Mr. Burt's authority on his side of real freedom of classification. It may be noted that this inquiry, like most others of the kind hitherto, only gives results which observant teachers were already aware of. It would be fairer to say that such inquiries tend gradually to substitute knowledge, which must be accepted, for opinion, which may be rejected, by administrative authorities.

We make no pretence to having done full justice to the thoroughness of Mr. Burt's piece of work, and we have not been careful to emphasise the praiseworthy labour with which he repeatedly warns us that, as is inevitable in a first attempt, the methods are but tentative and the results provisional. But we agree with R. Blair that Mr. Burt has initiated a group of investigations which, if continued extensively and intensively, should lift the practice of teaching from empiricism and lay it on a broad scientific foundation.

## A CENTURY OF EUROPEAN HISTORY.

*Main Currents in European History, 1815-1915.* By Prof. F. J. C. Hearnshaw. 360 pp., with maps. (Macmillan.) 7s. 6d. net.

PROF. HEARNSHAW'S new volume on European history will be found decidedly useful and suggestive. The book has been worked up from a course of lectures. To rewrite in cold blood what has been already delivered, probably with the force and freshness which comes from the sympathy of an interested audience, requires no little skill. But those printed lectures can not have been their original charm, forced words such as come more naturally to the lips than to the pen, epigrams which were not coined originally but show a power to hit on the right words to suit the fact or policy being described, and endings of epithets which do really apply. The reader is surely fascinated as the class students must have been. Whether as lecturer or as writer, Prof. Hearnshaw drives home his points because he understands what wants us to understand. A schoolmaster wishing to take his Sixth through a period that all thoughtful boys want to study can be warmly advised to use the book, designed though it is for university needs; of course, the said boys would have to know already something of the outlines. The general reader also ought to have the book brought prominently to his notice.

The period really is 1789-1914. We begin with the causes of the Great Revolution, are led on to the crisis of 1792-93, when France had her back to the wall, and so understand why, retaliating on her invaders and appealing to peoples against crowns, she so soon became aggressive. What Napoleon did, or failed to do, comes in direct connection with what the Republic did; here it must be stated that what he did for Europe is meant, for the Code and the Consular and whatever else he did for France are left aside. All this is not merely introductory to the Congress of Vienna, as would have been the case if the book started by order at 1815, but also part of the sub-

ject. Then come the decisions of the Congress, and some care is taken to show us that the Allied diplomats were not all scheming knaves bent on destroying national ideals and riveting at once the chains of slavery on the necks of peoples; there were difficult problems to be solved in 1814-15, especially as the Liberals were noisy and injudicious. At this point we look forward with interest to see what will be said of our Castlereagh and Canning, and as we read on we are satisfied.

The importance of the reign of Louis Philippe is not neglected; it is handled in such a way as to explain 1848, as are events of '48 and '49 to explain the *coup d'état* of '51. Time is not wasted in denunciation of Napoleon III.; his deeds are presented to us, his sudden halts when he seemed to be so successful, and then his childish incapacity in presence of Bismarck. It must be added that British policy is somewhat neglected. Palmerston's attitude on the Egyptian, Turkish, and Danish questions is passed over; something might have been made of the cooling of the Crimean *entente*, if only as a prelude to what is said later of the present alliance; also something of the suddenness of the Bismarckian advance as contrasted with the febleness of Frederick William IV., for we must remember that, if Palmerston misjudged Prussia's strength, it was because for more than forty years no Prussian had been a great leader.

The best of the work is the tracing of the various steps in the career of Bismarck, justice being done to him by the acknowledgment that the military chiefs, and not he, required the fortresses of Alsace and Lorraine, and in that of William II, after 1890. One would not wish for a more graphic account of the Morocco episodes or of the "shining armour" period. But one may be inclined to think that the "honest broker" policy of 1878 was a pretence, for Bismarck was quite keen to push on Austria to check Russian supremacy in the Balkans, while he let Disraeli have the credit so as to incur the enmity of Russia. Prof. Hearnshaw seems to imply that he really was indifferent. Perhaps also at a later period more might have been said about Japan. If just now we felt inclined to think that enough was not said about Palmerston, we have no cause to blame the short and cutting remarks on Disraeli, Gladstone, Salisbury, and the *ante-bellum* Ministry, except that Semitic hatred of Russia rather than sympathy with Turkey suits best our idea of the first-named. In short, a book to be read as it is worked up to the climax of 1914.

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

1. *Daudet, Le Petit Chose.* Edited by V. E. François. xii+203 pp. (Ginn.) 2s.—This is a pleasant abridgment of Daudet's charming tale, in which particular stress is laid on the autobiographical details. A very brief note provides some particulars of Daudet's life, there is a full vocabulary, and the notes on the text are quite satisfactory, though it gives one a shock to find Molière's remark about La Fontaine: "Ils n'effaceront pas le bonhomme," rendered by "They won't take the shine out of the codger." In all this there is nothing different from the usual run of editions of French texts produced in America. If we single out this book it is because it also contains quite respectable exercises on reform lines, a welcome sign of the advance in modern language teaching in the U.S.A. It is a pity that the discredited terms "passé défini" and "passé indéfini" have been retained.

*Leo Tolstoy, A Prisoner of the Caucasus.* Edited by E. G. Underwood and Nevill Forbes. xxviii + 128 pp. (Oxford University Press.) 2s. 6d. net.—This excellent short story was published as a "Russian Plain Text" some little time ago, at 1s. net. It now appears with a good introduction, very useful notes that clear up every difficulty, and a vocabulary, and may be recommended as a very suitable reader for one who has surmounted the first difficulties of Russian. The presence of a few dialect peculiarities in the text is no serious drawback. The enterprise of the Oxford University Press in providing such beautifully printed texts at a reasonable price deserves widespread recognition.

*A Skeleton Spanish Grammar.* By E. A. Peers. ix + 138 + xxi pp. (Blackie.) 2s. 6d. net.—Apart from the treatment of the pronunciation, which is scarcely satisfactory, this is a very good presentation of the elementary facts of Spanish grammar. Mr. Peers expresses himself lucidly and makes good use of a variety of types to make his meaning clear, and misprints are rare. The exercises are well thought out, conversational ones being frequent, and the later ones also contain some passages for reading. It is a thoroughly useful little book that we have no hesitation in recommending.

*Notebook of Modern Languages.* By I. H. B. Spiers. iii + 144 pp. (Heath.) 1s. 3d. net.—We have several English "notebooks" of this kind, with headings and space for the student to enter words, such as those compiled by Mr. Hodges and by Mr. Weber, which are much superior to the one before us. Mr. Spiers has strange ideas as to the relative importance of things. He gives three pages to "accents" and four to "derivation and philology"; eleven to "gender" and twelve to "grammar"; four to "pronunciation" and eight to "proverbs." More than half the book is assigned to "idioms" and "miscellaneous." It is amazing that an experienced teacher should be capable of producing such a poor "notebook."

#### Classics.

*Selected Letters of Cicero.* Edited by H. M. Poteat. xii + 201 pp. (Heath.) 2s. 6d. net.—This is a very handy and, on the whole, excellent selection. The introduction, which is admirably brief—being only two pages in length—gives all that need be known in order to appreciate the letters, and the selection made (considerably different from Watson's) provides an almost fascinating narrative. Dr. Poteat's object has been "to throw light upon Cicero's habits and character, and upon the life in which he moved." In this he has succeeded; our only criticism of his choice of letters is that we think an edition intended for young students should have provided better examples to show the contrast between Cicero's more familiar and more formal, or "periodic," style than this volume does. Nothing could be more instructive for the young student than the contrast between the average letter of, say, the fourteenth book "Ad Atticum" and the two to Antony and Dolabella respectively which that book contains. Dr. Poteat's selection is about equally divided, it is true, between those "Ad Atticum" and those "Ad Familiares," and there is a difference between these; but there are few of the most intimate and informal notes to Atticus, so that the divergence of style is not so well marked as it might have been. Apart from selecting, an editor of a volume such as this has only one other thing to do, i.e. to write the notes. (The text used is the Teubner text of Müller.) These we find very exhaustive; and Dr. Poteat says that he has deliberately made them so, because he finds the average student who comes up to him from

American schools "suffering from indifferent teaching. We do not know about American schools, but we certainly say that the commentary contains a general detail that Sixth Form boys in our schools will be otiose. At the same time, it is full of lucid and illuminating remarks, which are only occasionally marred by a strange obscurity. For example, on *locare voluisse, duobus his munericibus liberasses* ("Att.," iv., 4) Dr. Poteat says:—"You will have come out ahead on the two shows held recently (p. 131). We would not like to suggest that he does not understand the Latin, but his translation certainly does not help us to do so. The notes largely consist of such suggested translations for the more difficult phrases and passages, and Dr. Poteat quotes freely from Shuckburgh's excellent translation. We should like to have seen him following the time-honored custom and suggesting French equivalents for Greek; but this he has not done. In spite of these criticisms we can strongly recommend the volume as well printed and strongly bound, and its price is more democratic than we usually associate with American publishing houses for books of similar format."

#### History.

*Italy and the War.* Translated from the Italian by Mrs. G. W. Hamilton. viii + 268 pp. (Bell.) 2s. net.—The causes which led Italy to denounce the Triple Alliance and to enter into the war against Austria on the side of the Entente Powers are still apprehended by imperfectly by the mass of English people. Hence the statement of Italy's case by prominent Italians is very welcome in the excellent translation that Mrs. Hamilton's skilful pen here presents to us. The book consists of ten essays by ten different writers, all of whom are professors at one or other of the great Italian universities. The topics dealt with include "The Moral Reasons for Our War," "The Political Reasons," "Italia Irredenta," "Necessity and Reasons for the Present War with Turkey." The essay which will rouse the most serious misgiving in this country and elsewhere is probably that by Prof. Errera, Bologna, on "The Rights of Italy over the Adriatic." The writer boldly claims for Italy the whole of the eastern littoral of that sea, mainly on the ground suspiciously like that on which Germany claims Holland and Belgium—namely, that it is necessary to her existence and her security. Though it is impossible to agree with all the opinions of all the ten writers, there can be no doubt that this valuable collection of essays deserves close and sympathetic study.

*Italy, Mediaeval and Modern.* By E. M. Jamison and others. viii + 504 pp. (Clarendon Press.) 6s. net.—This volume belongs to the same series as the excellent handbooks on the Balkans and Prussia already published by the Clarendon Press. Like its predecessors, it is the work of a group of co-operators. Four writers deal respectively with Italy before 1250, Italy 1250-1527, Italy 1528-1789, and the Evolution of Unity. The last section—apparently from the pen of Prof. C. S. Terry—is the most considerable in size and the most important from the point of view of present-day interests. It traces the progress of the Italian national movement from the time of the French Revolution to its triumph in 1870. Then it deals with the less familiar theme of the subsequent development of Italian politics, shows why Italy entered the Triple Alliance in 1882, and why she left it in 1915. The book as a whole supplies what Mr. H. W. C. Davies, in a prefatory note, says has long been a real want in this country, viz. a "general sketch of Italian history from the barbarian invasions to the present day which can be recommended as an introduction to more detailed studies."

*Tales of the Scots.* Retold, from Holinshed's Chronicle, by Jessie P. Findlay. 92 pp. (Mackay.) 2s. 6d. paper.—This little volume contains six tales of medieval Scottish kings. They are adapted from modern reading from the version which Holinshed presented to his readers—chief among whom was William Shakespeare—in the latter part of the sixteenth century. Their original source was the fabulous Latin Chronicle of Hector Boece. Miss Findlay, in editing these ancient legends for modern students, of course makes no claims on behalf of their historical credibility. She admits that they are mere efforts of primitive imagination. But she rightly and effectively contends that they are so "full of the very quaintest of fancies, & rich in droll conceits," and that they contrive "to draw for us so vivid a picture of the passionate childhood of Scottish history," that they are worth reading and remembering. Of the six stories, the one which will excite most interest will no doubt be the last, "The Story of Macbeth"; it well repays comparison with Shakespeare's famous play. Miss Margaret Ross contributes six clever illustrations to the book.

*The City Churches: a Short Guide, with Illustrations and Maps.* By M. E. Tabor. 134 pp. (Headley Bros.) 2s. 6d. net.—This is an attractive little handbook on a most fascinating theme. The fifty-two churches, embedded in the midst of offices and houses, stand as a perpetual reminder of that medieval and early modern London which was so大大ly different from the City of to-day. The surviving City churches represent fewer than one-half of a goodly company that flourished in the days before the Great Fire of 1666. In that conflagration eighty-six perished, and many of these were not rebuilt, such as were reconstructed were for the most part the work of Sir Christopher Wren; no fewer than thirty-two of his churches still stand in the City; sixteen have been pulled down. Nine of the extant churches belong to the period prior to the Fire. Miss Tabor gives a brief historical and architectural account of each of the churches in turn—just such a sketch as a visitor, pressed for time, would wish to have before him as he pays a rapid visit to one building after another. At the end of the book a useful map shows the exact positions of the churches.

### Mathematics.

*Introduction to the Calculus of Variations.* By W. E. Byerly. 48 pp. (Harvard University Press.) 1s. 6d. net.—Physicists who desire to gain a working knowledge of the calculus of variations will find in this tract all that they require. The majority of the problems of applied mathematics in which the calculus can be used do not involve any differential coefficients beyond the first, and Prof. Byerly has limited his discussion to such cases, thereby simplifying the exposition of the theory without sacrificing any essential features. He has pursued the method adopted in his earlier works of first formulating various problems to which the calculus is applicable, and then developing the methods to be used for their solution. In the first two chapters he solves various geometrical and kinematical problems. In the third he takes up cases in which several dependent variables are involved, and gives a proof of Hamilton's principle for a single particle. Multiple integrals are next discussed, and the application of Hamilton's principle to systems of continuous bodies. In the last chapter some problems involving the variation of the limits are solved, and the principle of Least Action is established. Although there is nothing essentially novel in the book, the subject is explained with that clearness and just emphasis on fundamentals which characterise all Prof. Byerly's writings.

### Science and Technology.

*A Class Book of Organic Chemistry.* By Prof. J. B. Cohen. 344 pp. (Macmillan.) 4s. 6d.—Prof. Cohen's well-known text-books on this subject have become so indispensable to the advanced student of chemistry that the author has, in the present volume, attempted to provide the senior forms of schools and first-year medi-cals with an introductory course. This work he has accomplished in a most successful manner, and in every respect the book under review is a worthy companion to the other members of a most useful series. The practical and theoretical sides of the subject are treated concurrently, and so the manual serves both the lecture theatre and the laboratory. The three main divisions of the book deal with: (1) the general principles of the determination of structure; (2) aliphatic compounds; and (3) the more important aromatic derivatives. That Prof. Cohen's book will fill a gap is very certain; it is far more complete than its title would indicate, and the student who works through it consistently cannot fail to possess a sound working knowledge of his subject.

*Text-book of Organic Chemistry for Students of Medicine and Biology.* By Dr. E. V. McCollum. xiii+426 pp. (Macmillan.) 10s. net.—Dr. McCollum states in his preface that, if properly presented, the theory of organic chemistry never fails to arouse the interest of a bright-minded student. Certainly his survey of the principal classes of organic compounds is admirably adapted to arouse such an interest, and students commencing a course of organic chemistry have here a text-book which deserves the highest recommendation. The book deals fully with the aliphatic compounds, and does not omit to deal adequately with substances such as the amino-, hydroxy-, and ketonic-acids, the lecithins and phosphatides, and similar compounds which possess biological importance. Excellent also are the special chapters dealing with the ureides, carbohydrates and fermentation, the organic arsenic compounds, and the proteins (the last-named surely deserving more than three pages). The section devoted to benzene and its derivatives is small, but adequate for the purpose of the book, substances of biological and medical importance always receiving due mention. Naphthalene, anthracene, the polymethylenes, the alkaloids, the terpenes, and the synthetic dyestuffs are described very briefly. We do not think that the author has achieved his aim of restricting the subject-matter to an extent suitable for a half-year course; it is more probable that the average student would require nearly three times this period to absorb the information, in spite of the excellent way in which it is presented. The synthetic and technical details are intentionally reduced to a minimum, but statements such as "aniline results from the action of nascent hydrogen on nitrobenzene" and "benzene was formerly obtained from coal-tar" (tar distillers will be interested to learn this) suggest that a little less restriction might have been exercised. We prefer to describe glycerol as a "trihydric" rather than as a "triatomic" alcohol; it is doubtful if triphenylmethane is prepared in large quantities in the dye industry as a source of its derived dyestuffs, and "alizerin" is an unfamiliar spelling. These are, however, minor points and do not detract from our high opinion of the book. The printing, arrangement, and setting out of formulae and reactions are beyond reproach.

### Miscellaneous.

*Essays, Poems, Letters, by Lieut. B. Pitt, France, 1916.* 292 pp. (Marylebone: Francis Edwards.) 2s. 6d.—Among the books that owe their existence to this war the "Essays, Poems, and Letters of Bernard

Pitt" take a place of their own, not because of the form of the book, for we are convinced he would have arranged it otherwise, but because of the curiously attractive character of the man (known to many and breathing through his pages) and the excellence of the work done in his short life. The volume, with no editor's name on it, contains a short introduction by Prof. Wyatt, a selection from war letters, some sixty pages of verse, and a set of essays on literary subjects. The letters are full of life, some being written to relatives and some to "all whom it may concern," by which phrase we may perhaps understand Pitt's class at the Working Men's College, a body of people who knew him intimately, and who consequently felt his loss more closely than most, for Pitt was an ideal teacher from his early days.

The verse, as we might expect, shows influences, deeply absorbed, from the best lyrists of this country and France; no post-impressionism uglifies a stanza. He sings his advice :

"Cut, chisel, polish, pare :  
So garb your thought in pure  
And fair  
Marmoreal vestiture."

An artist's love of Nature, a lover's love of Christian rite and art, a thrilling sense of music mark all his verse, French and English.

In the essays his ambitions rather than his achievements betray themselves. He knew he had something to say to his classes, and, later, to a wider public. He had laid a firm foundation, for, though he used books as his tools, he had his intellectual rack stuffed full of these tools, from the heavy hammer to the tiny drill. Therefore his essays are filled with suggestions of what he would do, what he would *make* when he had the tool in his hand and his own thought for the material. All we have heard of him goes to show that he would have attained fame, not only in the narrower study of Old English, of which Prof. Wyatt speaks, but in wider creative writing. He was feeling his way. A slight notice of him appeared in this journal in June, 1917, and we will not repeat the story of his death. But we think it is a pity that his life is in this book passed over in complete silence. Doubtless his friends who are answerable for the book intentionally omitted his inspiring and romantic story; for from first to last Bernard Pitt's life had in it all the elements of that romance which is reflected in his writing.

## EDUCATIONAL BOOKS PUBLISHED DURING SEPTEMBER, 1917.

*(Compiled from information provided by the publishers.)*

### Modern Languages.

"A Junior French Course: First Year." By E. J. A. Groves. (Blackie.) 2s. 6d. net.

"A Skeleton Spanish Grammar." By E. Allison Peers. (Blackie.) 2s. 6d. net.

Tolstoy: "A Prisoner of the Caucasus." Edited, with Introduction, Notes, and Vocabulary, by E. G. Underwood and Nevill Forbes. 92 pp. (Clarendon Press.) 2s. 6d. net.

### Classics.

"Oxford Junior Latin Series": "Virgil, 'Æneid,' IV." Edited by C. E. Freeman. 108 pp. "Selections from Ovid." Edited by C. E. Freeman. 128 pp. "Livy, I." Edited by C. E. Freeman. 198 pp. (Clarendon Press.) Each 1s. 6d.

Cicero: "Pro Lege Manilia." Edited by A. C. Clark and C. E. Freeman. 56 pp. (Clarendon Press.) 2s. 6d.

Cicero: "In Catilinam." Edited by E. A. Upcott New edition, with Index and Latin-English Vocabulary. 82 pp. (Clarendon Press.) 2s. 6d.

"Our Renaissance: Essays on the Reform and Revival of Classical Studies." By Prof. Henry Brown. With a preface by Sir Frederic Kenyon, K.C. (Longmans.) 7s. 6d. net.

"Ad Limen: Further Exercises in Latin Translation and Composition." By Profs. Walters and Cowley. xi+129 pp. (Murray.) 2s. 6d.

"Continuous Latin Prose, intended for the Use of Upper Forms of Schools and to provide for the Writing of Continuous Latin Prose up to Scholarships Standard." By H. J. Dakers. 385+xi pp. (Rivington.) 5s. 6d.

### English: Grammar, Composition, Literature.

"Letters on the Spirit of Patriotism by Viscount Bolingbroke." Introduction by A. Hassall. 170 pp. (Clarendon Press.) 2s. 6d. net.

"Poets of the Democracy." By G. Currie Martin. 140 pp. (Headley.) 1s. 6d. net.

"A Skeleton Outline of Old English Accidence. Reprinted from selections from the Old English Bede. By Prof. W. J. Sedgefield. (Longmans.) 1s. 3d. net.

"A Browning Anthology." By A. Forbes. 94 pp. (Oxford University Press.) 1s. 6d. net.

Scott: "Marmion." Cantos I. and VI. Edited by F. Allen. xxiv+186 pp. (University Tutorial Press.) 8d.

### History.

"The Discovery of America, 1492-1584." Edited by P. F. Alexander. (Cambridge Travel Books.) xviii 212 pp. (Cambridge University Press.) 3s. net.

"The Teaching of History." By C. H. Jarvis. 240 pp. (Clarendon Press.) 4s. 6d. net.

"From Pericles to Philip." By T. R. Glover. (Methuen.) 8s. 6d. net.

"Main Currents of European History, 1815-1915." By Prof. F. J. C. Hearnshaw. xvi+368 pp. (Macmillan.) 7s. 6d. net.

"Our Sea Power: its Story and its Meaning." By H. W. Household. xviii+180 pp. (Macmillan.) 1s. 6d.

"An Analytical Outline of English History." By W. E. Haigh. 343 pp. (Oxford University Press.) 3s. 6d. net.

"Lessons in English History." By H. W. Carter. 208 pp. (Oxford University Press.) 3s. 6d. net.

### Science and Technology.

"Practical Cheesemaking." By C. W. Walker. Tisdale and Walter E. Woodnut. 182 pp. (Headley, 4s. 6d. net.

"Human Physiology." By Prof. Luigi Luciani. Translated by Frances A. Welby. Vol. iv., "The Sense Organs." Edited by Gordon M. Holmes. x+520 pp. (Macmillan.) 21s. net.

"A Beginner's Psychology." By Edward Bradford Titchener. xvi+362 pp. (Macmillan.) 6s. net.

"Primitive Ritual and Belief." By E. O. James. (Methuen.) 5s. net.

"Eastern Exchange, Currency, and Finance." By W. F. Spalding. 375 pp. (Pitman.) 10s. 6d. net.

### Pedagogy.

"The Message, the Messenger, and the Method." By G. Currie Martin, Effie Ryle, and J. H. Wimms. 96 pp. (Headley.) 1s. 6d. net.

"The World of States." By C. Delisle Burns. 144 pp. (Headley.) 2s. net.

"Means and Methods in the Religious Education of the Young, with Special Reference to the Sunday School." By John Davidson. (Longmans.) 3s. net.

"The Education of the South African Native." By Charles T. Loram. (Longmans.) 6s. 6d.

"The Art of Teaching Arithmetic : A Book for Class Teachers." By Jeannie B. Thomson. (Longmans.) 3d.

"Manuscript Writing : A Series of Papers Read at the Meetings of the Child-study Society, and reprinted from 'Child-study.'" (Longmans.) 3d. net.

#### Miscellaneous.

"The Chivalry of the Kingdom of God." By the Rev. C. Redman. (National Society's Depository.) 1s. 6d. net.

"The Cooking Box : How to Make and Use It." By Miss C. C. Radcliffe Cooke. (National Society's Depository.) 1s. 6d. net.

"Stirring Tales." In Easy Pitman's Shorthand. 52s. (Pitman.) 8d.

"Year Book Press Series of Unison and Part Songs for Schools":—No. 146, "Sweet day, so cool." Threestaff song. Composed by Dr. G. H. Smith. 8 pp. (Year Book Press.) 3d.

#### CORRESPONDENCE.

*Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

#### "New" Languages—and French.

I AM grateful to Mr. Woolf for emphasising a point which I had not lost sight of, and only excluded from my article on "New Modern Languages" for reasons of space. The present truce between "method-ists" in various schools must not be interpreted to mean that interest has lapsed in the language of our nearest ally, nor must the combatants be drawn into the fray ("Spanish versus German") to the detriment of their interest in French. It must not be forgotten that the average pupil's strength lies in the subjects which he has been learning for years, not in any which he may take up for a few terms before leaving school—in the first modern language rather than in the second or the third. And whether or not German is supplanted, either permanently or for a time, by a language or languages introduced during the war, it is certain that nothing can diminish the value, either from the utilitarian or the educational point of view, of a thorough knowledge of French.

Will our reformers remember this? Many an energetic teacher is feverishly learning a second or a third foreign language in order to be able to introduce it into his school's curriculum; well and good, he is doing a national service. But let him see to it that the hour he spends in learning Russian verbs is not one in which he should be correcting French compositions. It would be well if every school which mediates the introduction of another language first did its utmost, by increase of time or improvement of organisation, to make its pupils more efficient in those it already teaches.

Many modern language staffs, in every grade of school, will, of course, have to be improved before progress can be made. In many schools, too, efficiency is impossible, because other subjects usurp the time which the first modern language may reasonably demand. But apart from these questions, which cannot profitably be discussed here, there are certain reforms which every French teacher can make. We may not all have enough time, but each of us is master of the time he has. Our pupils may not be particularly able; then keenness must do some of the work of genius. We may not have colleagues to co-operate with us; then our own resources and powers must co-operate to

do the work of others. Within the four walls of our classroom at least we are supreme.

One of the greatest needs in all teaching, it seems to me, and certainly not least in the teaching of French, is an increase of suggestiveness. By subtlety and guile we must contrive to make our pupils realise the possibilities of the study of a language, so that when they leave us it may suddenly dawn upon them that, so far from their education in French being over, it is only just beginning. Perhaps the principal requisites for a suggestive modern language course are to be found not so much in the course as in the teacher. He must in the first place be absolutely convinced of the value of the knowledge which he imparts, keenly interested in the future career of every one of his pupils, and, more generally, in the larger world outside than that in which his activities are mainly confined. He must also be interested in his everyday work, even in its most humdrum details, never setting work for the mere sake of setting it, and effectively concealing any *ennui* which he may at times experience. Most important is it, too, that he should be thoroughly at home in his subject in all its branches, so that his pupils may feel his knowledge to be a deep mine from which valuable treasures can always be obtained, not a shallow pool through which the dullest of them can from time to time see the bottom.

If these qualities are assured, accessories will do much to increase the suggestiveness of the teacher's instruction; without them, it must always be small. Among these accessories the best tried are perhaps the modern language library (including a magazine section, which is often very popular), the French Society for boys who are specialising in other subjects, but like to keep up their French, and the most attractive device of all—the promotion of interest in things French by means of an international correspondence.

The employment of accessories of this kind leads us naturally to a *widening* of the course itself. And here we are faced with a number of methods of development, each of which requires an article to itself. There is, for example, the systematising of free composition, probably the most abused form of exercise in any subject, but one which, if properly practised, would revolutionise the French of many a school. There is, too, the introduction of extensive reading in class side by side with intensive, closely connected with which, though not apparently so, is the problem of the literary text and the teaching of elementary literature in the higher forms. A wider problem still is the vexed one of correlation—whether of French and English literature, of various languages, dead and living, and, finally, of modern languages and modern history.

Thirdly, we shall make our syllabus more *practical*. And here we meet the critic. "Utilitarianism," "bread-and-butter teaching," "no real education on the modern side"—we have heard it all before, and we must be prepared to hear it many times again. Nor need we take it particularly to heart, for a practical course means, not commercial letter-writing, nor even military unseens, but training a pupil, not alone to *understand* the language, but also to use it. And in this there is as much educational value as the most exacting critic could desire.

Practical teaching gives the principal place to composition, by which is meant, not prose translation, but self-expression in free composition, whether by means of essays, as in the highest forms, or of exercises like reproduction in the lowest. It also includes, in every stage of teaching, continual oral self-expression, so vehemently decried by some as leading to mere "chattering," and fatal to accuracy, but in reality, when properly controlled and combined with systematic instruction in grammar, of the highest value.

Practical teaching, on the other hand, is entirely in favour of the most rigid economy of time, even on instruction which is considered up-to-date. When it is possible, for example, to devote one lesson a day to a language, it is more than desirable to study its pronunciation systematically and in detail, by means of the phonetic alphabet. But to attempt to teach more than the rudimentary vowel sounds with an allowance of three lessons a week is to court disaster both in this and in other directions. Equally fatal is the tendency, so common with teachers of a certain type, to over-emphasise the importance of *realien*. All such aids to learning are, after all, but subsidiary, and if their total worth is put at its highest figure they are of less value than the writing, once a week, of a single page of careful composition.

Lastly, it may be asked, what is the place, in our practical course, of grammar? The answer is simple. As a study in itself its place is slight; in so far as it is employed in the processes of interpretation and expression it is of the highest importance. Hence grammar must be taught—taught carefully, regularly, thoroughly, taught inductively just so far as the time at our disposal permits, but, above all, taught in the closest relation to matter written or read. At the same time it must not be forgotten that much time is wasted in all language lessons in the imparting of elementary knowledge which should have been firmly implanted years before. A thorough grounding in general grammatical principles will always be a feature of the practical school.

E. ALLISON PEERS.

#### A School Experiment: End-of-Term Work.

THE fact that a week of the term remained at the close of the external examinations gave the authorities at Leighton Park School, Reading, an opportunity of once again<sup>1</sup> organising a "special week."

This year the object aimed at was some training for social service. The school is situated close to the parish of Shinfield, one of the largest in Berkshire, and an effort was made to study the history and conditions of the parish somewhat on the lines of regional survey. Time prevented this being done thoroughly, but it will be seen from what follows that what at first sight appeared to be an uninteresting district proved to be one rich in historical association, and able to provide work, stimulus, and thought for all types of schoolboys.

Lectures were given to the whole school on the history, geography, and geology of the parish; also on the ideal village, village government, and the parish church. The knowledge that there was a pseudo-garden village in the district, and that the University College of Reading has an experimental farm there, naturally pointed to investigation in these directions.

For the purposes of the survey the work was divided into three groups—biological, geographical, and historical. Boys were allowed to join which group they preferred, and emphasis was laid on the group rather than on the individual, though, of course, each boy kept a notebook in which he recorded his own work for the week. Groups subdivided themselves according to requirements, with the result that there were usually some half-dozen boys working at the same problem. An advisory committee, consisting of representatives from each group, met daily, kept in touch with the progress made, prevented overlapping, and made suggestions for future work.

The history group investigated the manorial system (there are three reputed manors in the district); the church, with its revenues, charities, school, and list of vicars, with its sidelights on history; the development

in agricultural science and machinery, culminating in the experiments that are in progress on the colliery farms.

The biologists prepared a list of the flowering plants distinguishing between those found in damp meadows, dry meadows and pasture, and common land; the details of pond and river life, made a full report of the demonstration at the experimental farm, compiled a list of birds seen in the district, and contributed a coloured map depicting a botanical survey of the parish.

The geographical section dealt with some of the problems connected with the river Loddon, measured its velocity, depth, and breadth, and made a map of the course, showing the fords, bridges, and nature of the banks; investigated the character of the soils, the rotation of crops, water supply, and footpaths. It also made a relief map and a geological map of part of the district.

At the end of the week the school met under the presidency of a prefect, speeches were made by representatives from each group, questions were put and answered, and the notebooks, maps, paintings, photographs, and drawings inspected. A permanent record has been furnished in a book, fully illustrated, containing the reports of the groups, lectures, and essays which will be placed in the school library.

The inquiry naturally brought the boys into contact with many people; it is a pleasant duty to record how willing they were to help. The squire, the parish priest, the village schoolmaster, the parish council, the carrier, and the farm labourer all contributed facts of value.

The result of the week was satisfactory, the number of poor notebooks was extremely small, talent hidden in the classroom came to light. As a study in regional survey and a consideration of the problems that await the village in the future, and the ideal method of tackling them, the work was necessarily incomplete; it may possibly form the subject of a debate next term. How far the underlying aim of the whole was achieved is, of course, impossible to say. The fact that each boy was working for his group, and so ultimately for the school, was of distinct value, but clear as this was to the staff, the idea would not consciously form itself to most of the boys. But, unconsciously or not, the study of a village community has been begun by all, and the seed may bear fruit in the future, though dormant for long enough first. It is village life that has been specially chosen for the experiment, as the headmaster is strong in a belief that living contact with a comparatively simple community gives a right basis both for conscious and subconscious training for boys. Town life is too intricate for the purpose, and slum problems need adult experience.

E. V. BALLARD.

Leighton Park School, Reading.

#### Secular, Religious, Aesthetic, etc., Education.

I HAVE recently received two hundred applications for copies of my "solution" of the religious difficulty described by me in THE SCHOOL WORLD (October, 1916, p. 400). May I remind your readers that I will send a copy to any one of them who forwards me a stamp and his address?

F. H. HAYWARD.

87 Benthal Road, N.16.

#### Examination for Indian Civil Service.

THE review in the September number of THE SCHOOL WORLD of the "Proposed Examination for Class I. of the Civil Service" raises the question of the proper course to be pursued when the good of the people of India and that of the people of the United Kingdom are incompatible one with the other. While the general case is difficult, the particular one raised by

<sup>1</sup> See THE SCHOOL WORLD, October, 1911, p. 398, "An Emergency Curriculum," H. Hale.

Your reviewer is perhaps not insoluble. Let us look at the facts.

Commission specially appointed to consider the method of selection for the Civil Service of India, that élite which is the pivot of Indian administration, has decided that recruits should be selected at the school-leaving age, and not, as in recent times, at the university-leaving age. Your reviewer holds that this decision must not stand, because it would interfere with the education given in our secondary schools, by subjecting the boys to the strain of a competitive examination. Now the intention of the Commission is to fit the examination to the school curriculum, if that is done the wise schoolmaster will postpone special preparation for it to the last school year. In these circumstances the strain is quite tolerable for boy fit to bear the strain of after-life. Let us, however, assume the worst, and consider the degree of detriment to the school population that will result from a bad scheme of examination badly administered, with competitors specialising prematurely. In normal circumstances, on the present system of selection, the candidates number about two hundred. With the wider field of the proposed system the number will be greater, and may be at about five hundred. This means the training of a single candidate at a school here and there among thousands of secondary schools spread over the country. The total effect on the education of the country is negligible, and we conclude that the interests of this country need not, in this case at least, suffer in the way of the good administration of India.

I. N. D.

October 2nd.

"I. N. D." implies that the Commission to which he has laid down the only possible procedure for selecting candidates if the "good of the people of India" is to be consulted. That Commission was dissatisfied with the existing regulations; men selected according to these had often failed to acquire the necessary professional training in the one probationary year (which in the universities means less than six months' teaching)—by no means a surprising result, as men could go without any knowledge of foreign languages or of contemporary subjects, social, economic, and political, and thus often lacked all appropriate ground-work.

Since the report of this Commission the proposals of Mr. Leathes's Committee have been published, of which were given in the September issue of THE SCHOOL WORLD. If this form of examination (with a few slight modifications) is adopted for selecting candidates for the Indian Civil Service, the result will be to get first-class men with wide interests and linguistic capacity. It is not unreasonable to expect the successful candidates to work hard for nine months of the probationary year, and if the teachers are really efficient (many Oriental languages are learnt badly, often by means of very poor text-books), it should suffice.

"I. N. D." says it is the intention of the Commission to limit the examination to the school curriculum. But the Commission published its report before the Board of Education issued its regulations for advanced courses in secondary schools, and can scarcely have had these in mind, although they were adumbrated in the 1913 memorandum on curricula. Perhaps the Commission contemplated a "generalised school examination without limitation of subjects"; that at any rate is suggested by Mr. Anderson in presenting the report of view of the Commission in recent letters to educational weekly.

If there were a "generalised school examination" of boys of seventeen or eighteen, every schoolmaster

knows that over-pressure would be inevitable, and the results would be in direct opposition to the strong conviction that while the "general school examination," together with inspection, should test "general education," the work of the next two years should be more definitely (but by no means exclusively) specialised, so as to lead up to an honours course at a university. On the other hand, if the suggested examination at school-leaving age were indeed "fitted to the school curriculum," i.e. were made identical with the "higher school examination," which is destined to test the school work of boys of eighteen, then a very large proportion of the candidates for the "higher school examination" would be potential candidates for the I.C.S. This would disturb the work of our schools profoundly; it would, in effect, spoil the advanced work which is of such tremendous importance for our universities, by introducing the competitive element in its extreme form. "I. N. D.'s" estimate of a possible 500 candidates is very far below the mark. And what about the Indian candidates? Are we prepared to provide secondary schools throughout India that would enable the Indian boy to compete on equal terms with the English boy, or are we to have a lower standard for the Indian boy?

The solution offered by the Commission would be bad for English education, and it is very doubtful whether it would be good for India. The examination proposed by Mr. Leathes's Committee would be good for English education and would supply India with men of exceptional ability. It would show that in this matter certainly the good of the people of India and the good of the people of the United Kingdom are not incompatible.

THE WRITER OF THE ARTICLE.

#### The House of Education and its Work.

THANK you for the friendly notice of "The House of Education and its Work" in the September number of THE SCHOOL WORLD, a notice of which I enjoyed the good-natured railing as much as the kindly appreciation. I read somewhere the other day that any fool who had thought upon a subject for twenty years would have something new and worth hearing to say on that subject. With this saying by way of extenuation, may I be bold enough to claim that in fifty years I have found out two or three, seemingly unimportant, things about the behaviour of mind which make all the difference in the world to education? There is no credit, of course, in chancing upon what is there to be discovered, but is there not some discredit in going on as if no way had been ascertained of making the pursuit of knowledge for its own sake delightful and engrossing to children?

I know that my professional colleagues are as devoted, even as recklessly devoted, as the men at the front, but why waste labour on educational spade-work when there are a few principles the realisation of which affords results as striking, for example, as those yielded by the steam-plough in agriculture? Children narrate, say, some pages of the "Pilgrim's Progress" or of Seeley's "Expansion of England" (according to age and status) after a single reading, and are able to write upon what they have read with spirit and accuracy months later in the terminal examination. The mistress of one primary school writes:—"During the last twelve months we have had no less than 123 visitors." We had but this one primary school twelve months ago; now, thirty-four are doing the work, and many more are, I believe, about to begin.

"Quite wonderful," "amazing," are the frequent comments of educational authorities on the children's oral and written work, and the children themselves are so engrossed that the presence of visitors does not seem to disturb them.

Yes, "the programme is so full that revision is impossible," and "the examinations are designed to give pupils an opportunity of telling what they know"; but then, they have read and *know* hundreds of pages out of, say, a score of first-rate books, and the questions are on any part of the term's reading in each book. As for the very natural suggestions of "vain display," or a "pedagogic artifice," no answer occurs to me but to suggest a visit to some half-dozen schools in Bradford. I believe the spontaneousness of the children in these schools is very striking; failing this, we should be happy to send a few sets of examination answers and the three pamphlets on "A Liberal Education," issued for such purpose, to any teachers who are seriously interested.<sup>1</sup> There is an interesting article in the *Nineteenth Century* for April last, on "Courage in Education," describing a visit to one of these schools, and another article by a Bradford schoolmaster, dealing with the method as worked in his school, may shortly appear in the same Review.

It is, alas! true that my "whole psychology runs counter to the current biological views"; but are these "current" views satisfactory? Does the drudgery of teachers and children produce adequate results? Of course there are clever children whom no one can hinder from learning or keep from books, but how does the average, or "backward," child respond to his teacher's noble and devoted efforts?

This question brings me to what your contributor appears to regard as the *crux* of the situation...

"The personality of the teacher is, in fact, left out of count—surely a serious drawback to the whole idea." As a matter of fact, teachers who adopt this scheme claim that it is "new life" to them, but were it not so, we do not offer any public functionary a field for the exercise of personality, but, rather, definite work in which personality may play as it finds occasion. Why, then, should teachers allow *cant* to be talked about their particular "personality"? In fact, practical teachers do not concern themselves about what is no doubt a notion invented by the newspapers. On the other hand, teachers with what is called an engaging, a fascinating, or a powerful personality are apt to take up too much room; their pupils are "good" and devoted, but have not due space for their development.

The choice of books, again, is only a question of division of labour; when the children of each class read quickly a good many books—say, that a hundred books are current in a school—it rarely happens that the much-occupied head or staff can give the necessary time to a selection of which every teacher knows the difficulty. Any teacher is, of course, at liberty to substitute a book of his own choice and to set his own examination questions on it. As for the authoritative attitude of which I am accused, I suppose I must say, *mea culpa*, but then it is the authority belonging to a fact, not to a person; one does not say "sugar is sweet" with diffidence.

For the questions quoted, the labour and cost of printing must excuse us for not inserting, "Discuss and confute (after the manner of Lecky), etc."

One more point—that people should be allowed to subscribe for the programmes and use them as they think fit. Would it not be disastrous if a programme exacting the reading of hundreds of pages in a large number of books should fall into the hands of a teacher, however able, whose pupils were in the habit of preparing for an examination test by "getting up" (we will not say cramming) the required matter?

I wish the "professional teacher" of secondary

schools could be induced to try a method which makes a liberal education possible under the usual school conditions; and that, probably, with no change whatever in the time-table as regards the time allotted to what have been well called the "modern humanities."

CHARLOTTE M. MASO  
House of Education, Ambleside, October 1st.

THERE are two or three points in Miss Mason's interesting letter which call for reply. The invitation to "go and see" is not alluring. What is to be the ultimate fate of a school which has had 123 visits in twelve months? Whatever is good in the school, which is now being followed will inevitably be ruined when the school is so rapidly becoming a show-place. Even schoolmistresses who put their literary and scientific attainments at the disposal of the House of Education with sufficient success to justify astonished admiration in the onlooker will tend to forsake the interests of their pupils and seek rather to astonish the visitors. And what of the children who are called on to exhibit their prowess?

Of course, if teachers were Civil servants (or votives of the founder of a new Apostolic success) they would be regulated and prescribed for, and personality would be out of place. At best they would develop into "the gentlemanly official," who makes Diana's life unbearable. That is the tendency of public functionaries, and it is precisely because Parliament has wished to keep the functionary's spirit out of the teaching profession that it has so far refrained from making them Civil servants. In recent years, moreover, the Board of Education has given the widest possible freedom to teachers of all grades in the hope that individuals would put personality into their officings. Many will not, or cannot, do this, and for them Ambleside syllabuses may be a way of salvation. However, the salvation is thoroughgoing, the conversion will soon burst the bonds of the syllabus and will think for themselves.

Finally, the question at issue is not whether or not good books should be provided in great numbers for the children in the public elementary and secondary schools. If Miss Mason succeeds in convincing L.E.A.s of this need, the gain will be great. The issue lies in two questions: Who is to choose the books and how are they to be used? The first point has been dealt with, and the organised external examination system of the House of Education is, in many of our eyes, a condemnation of the second.

THE WRITER OF THE ARTICLE

## The School World.

A Monthly Magazine of Educational Work and Progress.

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<sup>1</sup> The Organising Secretary, P.N.E.U. Office, 26 Victoria Street, London, S.W.1.

# The School World

A Monthly Magazine of Educational Work and Progress.

No. 228.

DECEMBER, 1917.

SIXPENCE.

## THE ADJUSTMENT OF THE SECONDARY-SCHOOL CURRICULUM.

By Prof. WALTER RIPMAN, M.A.

THE Committee on the Neglect of Science has issued a report for the year 1916-17, the Council for Humanistic Studies a part of its proceedings under the title "Education, Scientific and Humane." THE SCHOOL WORLD has dealt with the efforts of these bodies on several occasions, but the data supplied in these reports make it desirable to review the situation and to consider whether nothing cannot be done to define the problem more clearly. Sir Frederic Kenyon, chairman of the Council for Humanistic Studies, remarks in a prefatory note: "So far, unanimity arrived at relates to the principles, rather than the details, of secondary education." A perusal of the proceedings affirms this view. So long as the representatives of science and of the classics are agreeing on generalities, there is a delightfulness to make courteous concessions. "It is essential," says the Conference of Humanistic Associations, "that any reorganisation of our educational system should make adequate provision for both humanistic and scientific studies." The Committee on the Neglect of Science states that its "essential object is to secure for the teaching of natural science a position of no less importance, as an essential component of a liberal education, than that which is now held by the teaching of languages and history."

When we get down to bedrock, it is obvious that we have to deal with a struggle to give natural science more importance in the "public schools," which term is defined as "the schools represented at the Headmasters' Conference." The original letter to the *Times* (February 2nd, 1916) made it clear that the signatories were thinking of these and were either satisfied with, or ignorant of, the provision for the teaching of science in our system of State-

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aided secondary schools. This rather limited outlook has had some curious results. Thus Sir Frederic Kenyon maintains that "a sound elementary [*i.e.* 'secondary,' to the age of sixteen] education ought to include for all a good grounding in languages and literature (ancient and modern), history, mathematics, and natural science." The Committee on the Neglect of Science states its opinion that, "in fact, a good form-master should be able to teach boys both natural sciences and literary subjects."

That neither the committee nor the council has viewed secondary education as a whole is clear, too, from the exclusion of women from their deliberations. They appear to be either satisfied with, or ignorant of, the state of things prevailing in our girls' schools. Yet, if they had chosen to consider the type of girls' school which, to some extent, corresponds with the "public schools," they might have arrived at some interesting conclusions.

Whatever we may think about this self-imposed limitation, we cannot agree that the consideration of the curriculum can profitably be confined to the hundred boys' schools represented at the Headmasters' Conference. And, indeed, no such limitation appears in the resolutions adopted by the conference held between representatives of the council and the committee on December 8th, 1916. They are as follows:

(i) That in all schools in which education is normally continued up to or beyond the age of sixteen, and in other schools so far as circumstances permit, the curriculum up to about the age of sixteen should be general and not specialised, and that in this curriculum these five groups of subjects should be integrally represented:

(i) Languages other than English.

(ii) English and history.

(iii) Mathematics.

(iv) Natural sciences, including geography (it is understood that geography would also be taught in connection with history).

(v) Artistic and manual training.

(2) That the representatives of the Council for Humanistic Studies be asked to collect the opinions of its constituent associations as to the proposal of the Neglect of Science Committee that the ratio of the five elements of a general education up to the age of sixteen, expressed in school periods devoted to them, be: Languages, 3; English and history, 3; mathematics, 2; natural sciences and geography, 3; artistic and manual training, 1. It is understood that the ratio extends over the whole curriculum, and is not necessarily that of a single term or school year.

The results of the reference to the five associations concerned were, on the whole, somewhat disappointing. Only two made any tangible statements. The Historical Association demanded that three periods a week should be assigned to history, and the Modern Language Association expressed the opinion that not fewer than five periods a week should be given to a modern language in the first two years, and four periods after that, and that a second language should not be begun until two years after the first is begun.

On the other hand, the Geographical Association is "opposed to laying down any definite apportionment of hours to subjects." The committee of the English Association "came to the conclusion that it did not come within its province to lay down any definite allocation of time for the various subjects." The council of the Classical Association "considers it a grave mistake to attempt to bind educational authorities to a fixed allotment of school hours"; and it adds, rather unkindly, that the grouping of subjects as given by the Neglect of Science Committee is "unscientific." It also "thinks it is not within its legitimate sphere of action to prepare time-tables or to prescribe allowances of hours, especially with regard to subjects not its own."

It is surely clear that this attitude is altogether wrong. We are glad to see enthusiasm in the specialist teacher; we like him to be impressed with the importance of his subject; we find it natural that he should try to secure the most favourable conditions for teaching it. But, if his demands are unreasonable, he may become a serious nuisance. His demands are unreasonable when he has lost his sense of perspective, when he fails to recognise the claims of other subjects. We are fully within our rights if we ask the specialist, when telling us how much time should be given to his subject, to bear in mind that the boys do not learn his subject only. We have a right to say: "Assuming that the education of boys up to sixteen should be general and not specialised, and that they are taught for thirty-six periods a week, what should they know of your subject by the age of sixteen, and how

much time is required in order that they may acquire that knowledge?"

The specialist's answer to that question will be more or less helpful according as he does or does not take a reasonable view of the curriculum as a whole, which is just the very thing that specialists seem so unwilling to do; until they learn to take a broader view we shall have, perhaps, "unanimity of principles," but this will remain without any practical advantage if there is obstinate refusal to discuss details.

Leave the specialists to formulate their demands in periods per week, without regard to the curriculum as a whole, add up the periods they require, and the aggregate amount to fifty periods a week. The actual school week contains from thirty to thirty-six periods. You cannot pour three pints into a quart pot.

The Neglect of Science Committee was acting entirely reasonably in putting forward a tentative allocation of time to the various school subjects. It will be profitable to compare this scheme with that of Committee D (Curricula and Methods in Secondary Schools) of the Education Reform Council as printed on page 36 of "Education Reform." (The perusal of this report would do many specialists a great deal of good.)

#### SCHEME OF COMMITTEE ON NEGLECT OF SCIENCE

				Periods per week
English and history ...	...	...	...	9
Languages other than English	...	...	...	9
Mathematics ...	...	...	...	6
Natural science, including geography	...	...	...	9
Artistic and manual training	...	...	...	3
Total	...	...	...	36

#### SCHEME OF COMMITTEE ON CURRICULA.

	Stage I. About 10-12	Stage II. About 12-14	Stage III. About 14-16 (sixth year)	
Scripture ...	I	I	I	6
English ...	6	4 (or 5)	4 (or 5)	28
History ...	3	2 (or 3)	2 (or 3)	14
Geography ...	3 (or 2)	2	2	14
French ...	—	5	4	1
Second foreign language or some alternative...	—	—	—	10
Mathematics ...	5 (or 6)	5 (or 6)	5 (or 6)	30
Natural science ...	3 (or 2)	4	4	22
Drawing, including colour-work ...	2	2	2	1
Vocal music and musical appreciation ...	2	2	2	12
Handwork ...	2 (or 3)	2	2	12
Physical training ...	3	2	2	12
Total ...	30	31 (34)	35 (38)	

For purposes of classification (though not as a matter of teaching), we may divide the time given to geography between "English"

jects" and "natural science." Our totals, n. are, for the six years, omitting the bracketed alternatives:

English subjects	...	...	...	...	49
Other languages	...	...	...	...	28
Mathematics	...	...	...	...	30
Natural science	...	...	...	...	29
Other subjects...	...	...	...	...	56

if we take the four years from twelve to teen :

English subjects	...	...	...	...	28
Other languages	...	...	...	...	28
Mathematics	...	...	...	...	20
Natural science	...	...	...	...	20
Other subjects...	...	...	...	...	36

Assuming that the Neglect of Science Committee had in mind only the years twelve sixteen, and giving one geography period to English subjects" and the other to science, get the following comparison of periods week :

	Neglect of Science Committee	Committee on Curricula
English subjects	...	10
Other languages	...	9
Mathematics	...	6
Natural science	...	8
Other subjects...	...	3
		19
		14
		10
		9

It is interesting to observe that the proportion of time given to humanistic and to scientific subjects (19:14, 14:10) is almost the same in these two schemes. There is a noticeable difference, however, under the heading of "other subjects." To set aside only three periods a week for "artistic and manual training" shows a grave neglect of essential subjects; but, then, art and music and handicraft were not represented at the conference. Physical instruction should also not have been left out of consideration, and Scripture demands at least one period in the week. In many "public schools" some of these subjects lie outside the ordinary curriculum, being rated rather as hobbies; whether they then receive adequate attention from every boy is, say the least, doubtful. We are, however, concerned with "all schools in which education normally continued up to or beyond the age of sixteen," and in the great majority of these one must be found in ordinary class hours for these "other subjects." Ordinary class hours means, as a rule, seven periods a day on five days in the week, or four such days and two mornings with four periods each—that is, a total of thirty-five or thirty-six periods (of forty to forty-five minutes). Probably this is much as can safely be expected of pupils of thirteen to sixteen, if they are to have time for preparation, games, and leisure occupations. For pupils of twelve to fourteen it is question whether it is advantageous to have more than thirty periods in the week. After what has been said it will be recognised

that, while the Neglect of Science Committee was quite right in asking the Humanistic Associations to express their views as to the time required in order to obtain a "general" knowledge of their respective subjects, it did not present the problem at all adequately, and this, to some extent, may explain the unsatisfactory nature of the answers received.

The Classical Association suggests that associations representing various branches of knowledge might well indicate what particular portions of the subjects studied "should be included in the curricula of secondary schools, whether in their general or their more specialised stage." The Geographical Association "would prefer a statement of what should be expected of the average boy or girl at the age of sixteen." Both associations object to expressing any views on the distribution of the available school time. Yet surely the degree of knowledge in any subject that can be expected of a boy of sixteen depends to no small extent on the amount of teaching he has received. If a boy is taught a subject during eight periods a week, we may expect more of him than if he has four periods a week. A classical specialist may say: "This is the amount of Latin every boy of sixteen ought to know." Are we not, then, bound to ask: "For how many periods a week and for how many years must he have been taught Latin in order to reach this standard?" and when we have received an answer, we are compelled to ask a number of other questions, such as: "If he begins Latin at the time you suggest, how will this affect the teaching of French?" "If you require so many periods for Latin, what other subject are they to be taken from?" We may even ask whether every boy should be made to learn a second foreign language, and whether the second foreign language must necessarily be Latin.

We have purposely taken the subject of Latin because the place of languages other than English is really the problem at the root of all this struggle between representatives of the humanities and of natural science. It is impossible to deny that in some of the "public schools," including many of the most famous, the traditional veneration of the classics has made these bulk very largely in the curriculum, and scientific subjects have been admitted in a grudging spirit. Specialising in the classics has been the rule long before the age of sixteen was reached. The methods of language teaching have often been very unsound and wasteful; time has been wasted partly because the methods have been bad, and partly because there has been so much time to waste. During the last twenty years, however, real progress has been made in this

country in the theory and practice of language teaching; and in the light of this knowledge we are bound to reconsider the problems which languages should be taught, in what order, when, and how.

Whereas English subjects, mathematics, and science rightly claim a place throughout the years up to sixteen—that is, as long as the education remains “general”—foreign languages are introduced one after the other. The problem, then, is so to adjust the curriculum that, while adequate time is allotted to these languages, there shall be no such encroachment on the time for any other essential subject that the teaching of it ceases to secure that standard of knowledge which we regard as desirable in a general education up to the age of sixteen.

Associations of specialists often find some difficulty in expressing opinions as to methods of teaching because they include members of widely divergent views; there is a natural tendency to compromise. The collective wisdom of an association may consequently be inferior to that of some individual members, who can give expression to the fruits of their experience without reserve. It would, therefore, be very valuable to have the views of specialists on some of the points indicated in this article:

(1) Does the distribution of periods suggested by the Committee on Curricula (p. 402, *ante*) meet with your approval? If not, how would you amend it, bearing in mind that the aggregate of thirty-six periods per week should not be exceeded?

(2) What knowledge of your subject should a boy of sixteen possess, after spending four years at an efficient secondary school, in which the time available for your subject is as indicated in the scheme of the Committee on Curricula or in the amended form which you favour?

The inquiry might well be extended to cover the education of girls. In their case should there be any difference in the proportion of time given to humanistic and scientific (including mathematical) studies?

The movement for co-ordinating examinations initiated by the Board of Education renders it particularly important that we should establish what may be expected in the way of general education from boys and girls at the age of sixteen, when they take the first examination suggested in Circular 849. Various examining bodies have published syllabuses and will set papers for examinations of this standard. The School Examinations Council will have to determine whether there is equivalence of standard, and whether the standard is a reasonable one. This can scarcely be done in a satisfactory way

unless we ascertain what is the minimum knowledge (*i.e.* that which justifies a pass) to be expected in each subject, and that, as I have endeavoured to show, is closely bound up with the time available for each subject in a well-balanced curriculum.

## HOW TO WRITE WITH THE LEFT HAND.

By P. B. BALLARD, M.A., D.Lit.

### II.—THE CHARACTERISTICS OF LEFT-HANDED SCRIPT.

LET us examine a few specimens of writing done with the left hand and compare them with those done with the right. The first example (Fig. 3) is supplied by my friend Mr. Benchara Branford, the author of “Jazz and Vesta,” who began learning to write with his left hand nearly three years ago owing to severe and long-continued neuritis in his right arm. He now does nearly all his writing with his left hand, as the neuritis returns if he makes much use of his right. Specimen No. 1 exemplifies the pace at which he writes when he wishes to make a permanent record ready for years later; No. 2, the pace for temporary notes. His pace for letter-writing is somewhere between the two, but nearer the second than the first.

It will be observed that the general trend of the lines in both the right-handed and the left-handed script is in the direction which was shown in the last article to be the most favourable—the forward slope in one case, and the backward slope in the other. Mr. Branford has evidently been accustomed to make much use of his wrist and elbow as hinges for the movements involved, and, as is readily conceivable of a man whose thought processes are exceptionally rapid, has paid scant attention to the hooks and curves which depend in the main upon the delicate co-ordination of fine muscles.

The second prominent characteristic of Mr. Branford's left-handed writing is the frequent omission of the coupling lines. Comparing No. 2 with No. 4, we find that, whereas in the right-handed script all the letters in every word but one are joined, and in two instances even the words are linked up, in the left-handed script there is only one unbroken word—and that a word of only two letters.

Another noticeable feature is a tendency towards a simplification of the forms of the letters, so that some of them appear to be printed rather than written cursively.

Mr. Branford tells me that these two last features are the deliberate result of his belief in the superiority, in united speed, legibility and ease, of writing allied to printing rather

in to the modern cursive and continuous le.

If now one of the two scripts be looked at in mirror or viewed through the back of the ge and compared with the other, it will be nd that, in spite of the differences I have ntioned, there remains a fundamental larity of type.

This is the case of a man, naturally right-handed, who has, by force of circumstances, n compelled to write with the left hand. e now come to a different kind of case—that a congenitally left-handed man who has n trained to write with the right hand only. r this example (Fig. 4) I am indebted to the ttesy and kindness of Mr. George Clausen,

*This is a specimen of writing  
done with my left hand.  
J. Bransford. Sep 1917  
(Time 34 sec.)*

*This is a specimen of writing done  
with my left hand. J. Bransford.  
Sep. 1917. (Time 19 sec.)  
This is a specimen of writing done  
with my right hand to Bransford  
Sep. 1917. (Time 22 sec.)*

*4. This is a specimen of writing done  
with my right hand to Bransford  
Sep. 1917. (Time 18 sec.)*

FIG. 3.—Mr. Benchara Bransford's handwriting.

A. I had submitted to him a specimen of joined lettering—sometimes called “manuscript writing” or “print writing”—which is coming increasingly popular in our schools, d the passage reproduced in Fig. 4 is an excerpt from his letter of reply. Mr. Clausen ss: “I am naturally left-handed, but I do t write with the left hand, or do other ordi- ry things. One is taught to use the right; t, although I can to some extent use the ht hand in drawing, I could not be kept om using my left hand: therefore I have it more perfect control. But, were I to lose I think I could make shift to some extent th my right.” It will be seen by examining r. Clausen’s left-handed script that the

question of joining the letters does not present to him much difficulty. This is what one would naturally expect of an artist the fingers of whose left hand are not only congenitally pre-disposed towards the acquisition of skilled acts, but have also been highly trained in the manipulation of the pencil and the brush. For the coupling lines lie in what I have demonstrated to be an awkward, or indeed impossible, direction for wrist or elbow movements: they must be made, if made at all, by movements either of the whole arm or of the fingers. The other important characteristic of left-handed writing—the tendency to avoid the forward slope—is clearly present.

We have dealt with the two possible cases of adult left-handed writing, one in which the naturally unskilful hand was used, and the other in which the naturally skilful was used. Among school children only one type of case is likely to arise, that of the naturally left-handed. I know of no school where ambidexterity is taught—where normal children are required to write with the right and left hand interchangeably. The left-handed writers are always sinistrals. One occasionally comes

*The suggested form of writing which you  
enclose is, I think, very good; but I don't fancy  
there is any great difficulty in connecting the  
letters if this is written with the left hand  
fairly quickly).*

FIG. 4.—Mr. George Clausen's handwriting.

across a child with a paralysed right arm, and in this case it is impossible to discover his natural handedness: it is assumed that he is left-handed. But all left-handed children do not write with the left hand. Some have ill-advisedly been trained to use the right hand only, and have never used the left; but the majority seem to be able to write fairly well with either hand. Some use the right when under observation, and the left when nobody is looking at them; others have had so much practice with the right that they now use that hand for preference. Thus one finds a large variety of grades ranging from unidexterity to ambidexterity. Strict ambidexterity is rare. When it does appear—when the pupil writes with equal facility with both hands—the scripts produced are almost indistinguishable. There is always a resemblance between a child’s left-handed script and his right-handed script; when the speed of production is the same the resemblance becomes almost absolute. The example reproduced in Fig. 5 is one of several which I might have given to illustrate the fact. It is probable that the left hand gets the lead in forming the style, for one rarely finds

among bi-manual writers a tendency to adopt a forward slope with either hand. This identity of character in handwriting is apparently of wide significance, since there is reason to believe that with whatever part of the person one writes—whether with the fingers, the toes, the teeth, or the elbow—the results show well-defined marks of individuality : they are all in a sense the same writing.

School children who write with the left hand, whether they are bi-manual or uni-manual writers, present certain common characteristics. As a rule they write a little slower and a little worse than the dextrals, or right-handed. They affect either the vertical or the back-hand style. They generally ignore the distinction between the thick and the thin lines caused by a difference in pressure on the pen. It is extremely difficult so to imitate right-handed script with the left hand as to get the thick and thin strokes in the right place; for whether the thick stroke is produced by pressure or by the mere breadth of the pen-point the angle at which the pen is naturally held precludes identity in the distribution of thick and thin. But, although difficult, it is not impossible. I

*This is written with my left hand  
marginally using 2½ minutes  
This is written with my right hand  
marginally using 1½ minutes*

FIG. 5.—A left-handed schoolgirl's handwriting.

have seen a young girl hold the pen in the left hand so that the holder points beyond the right shoulder, and thus produce, with fair facility, the main characteristics of right-handed script. But the position was strained and unnatural, and the training laborious; and, after all, was it worth while? It struck one as being little more than a miracle of contortion. To escape the thick-and-thin difficulty the pupil sometimes writes with the back of the pen and thus secures a uniform thickness—or rather thinness.

In order to avoid the smudging and the obscuring of the part already written various devices are adopted by the left-handed writer. Of all I have witnessed the most bizarre was that adopted by a boy who wrote with his hand resting on the paper above the script and his pen pointing away from his face, so that the writing was done between his hand and his body. The usual plan is to twist the hand so that the palm is parallel to the plane of the paper and the pen pointing to the face—a position which requires the two bones of the fore-arm to cross each other instead of remaining parallel, and must be regarded as unnatural and undesirable.

The passage of the left hand across the page

from left to right proceeds with a peculiar jerky movement which contrasts with the smoother movement of the right hand. Whenever a horizontal line has to be made by a left-handed writer (such as in crossing the "t," punctuating with a dash) it is almost invariably made from right to left.

And now I come to the most curious and most characteristic feature of left-handed writing—its tendency to become mirror-writing. The following extract from Mr Clausen's letter explains it :—

There is, however, a peculiarity in handwriting arising, I fancy, from some sympathy between the muscles, or the nerves, of each hand, which I might prove useful to those of our soldiers who have lost the right hand. I do not think it is generally known, and possibly it would not come readily to everybody, but it is this: If you write with the hand *in reverse* you will find that the writing, being seen in a mirror, or through the paper, has the same peculiarities as one's ordinary hand; and, if one can "let oneself go," and write with the left hand instinctively, it is not so difficult. If one thinks at it one generally goes a little wrong. I enclose a specimen of this. I've written the same verse on both sides of the paper, one with the right hand and the other with the left, and if you hold it to the light you'll see they're pretty much the same. One hand is written as quickly as the other. I have never practised this, but found it out by chance.

The specimen referred to is given in Fig. 5.

This curious phenomenon, which is well known to physiologists and psychologists, has given rise to speculations respecting the relationship between the two halves of the brain. The salient facts are few and clear. When young children begin to print they often tend to reverse such letters as "s," "b," and "d," and sometimes in writing they reverse the order of the letters in a simple word, such as "no"; but this is a casual lapsus due apparently to defective visualisation. It differs essentially from mirror-writing, which is always written from right to left. With rare exceptions it is done by left-handed people only and with the left hand only; the occasional occurrence is fairly common among children; it resembles in every detail the subject's right-handed script; and it is written by feel and not by sight. This last feature is important. The subject does not at first recognise the word as he writes it down; nor can he without some practice read it until he has reversed it in a mirror. His muscles seem to tell him as he writes whether he is making the correct movements. It is clear, therefore, that the phenomenon is motor rather than visual. In fact, if the reader will try it for himself he will find that reverse writing with the left hand is fairly easy from the first, and that he can do

just as easily with his eyes shut as he can with his eyes open; or, indeed, more easily, for a view of the script as it emerges from the pen has a peculiarly confusing effect. Its unfamiliar aspect disconcerts one: it looks all wrong. Writing is originally acquired by imitating seen forms; or, to put it into psychological terms, is controlled by a visual series. The learner imitates certain shapes presented to him: his work is a kind of drawing. But if it stopped there—if the visual control were the only control—no progress would be made: the writer would write no better at the hundredth attempt than at the first. In fact, another series of experiences—the motor series—the sense and of movement—gradually supplements, even if it does not supplant, the visual series. The

*How victory to our England!  
And whether she lifts her head  
In freedom's fight, to rescue Right,  
God bless the dear old land!  
And when the storm has passed away,  
In glory and in calm,  
May she sit down in the green of the day  
And sing her peaceful psalm.*

*I wonder was it writing, was it  
Drawing, was it sketching, was it  
Thinking, was it imagination?  
I know we read all about how  
Came up and wrote with the hand  
Under a lamp, while  
He kept still, wrote the same point  
Under a lamp, and again and again*

FIG. 6.—Mirror writing by Mr. Clausen.

eye of the practised writer is almost solely concerned in seeing that the writing is right: it scarcely concerns itself at all with the shape of the individual letters or even the individual words. The complex writing habit is become embedded in the brain, nerves, and muscles which guide and regulate the movements of the pen.

The motor basis of mirror-writing is again indicated by the significant fact that the spontaneous form of it is not a primary, but a secondary, performance. The left hand cannot do it until the right hand has first learnt its counterpart. It is only when the right hand is formed and fixed a motor habit that the transfer takes place from right to left. That there are sympathetic movements of the right and left hand there can be little doubt. Let the reader try to produce in the air with the finger

of his right hand any sort of curve, and at the same time a similar curve with the left hand. He will find that reverse movements are quite easy, while parallel movements are difficult. The natural movements are symmetrical, but not identical; the forms are analogous, but the directions are reversed.

It is an established physiological fact that the right hand is controlled by the left cerebral hemisphere, and the left hand by the right cerebral hemisphere; and it is almost equally certain that handedness is primarily a brain fact, not a hand fact, although, of course, the two organs are intimately connected and react on each other. It is the fact that one of the hemispheres is natively more educable than the other that makes a person unidextrous. Is the physiological result produced by learning to write with the right hand limited to the left hemisphere? Apparently it is not: it seems to give rise in some measure to a sort of symmetrical development of the other hemisphere. In other words, while training the control centres of the right hand we are also to a certain extent training the control centres of the left hand; but to the production, not of identical, but of reverse movements. We shall, in a later article, discuss the advisability of availing ourselves of this stored-up power.

(To be continued.)

#### EDUCATIONAL ASPECTS OF THE KINEMATOGRAPH.<sup>1</sup>

By H. O. HALE, M.A.  
Oundle School.

THE report of the Kinema Commission of Inquiry instituted by the National Council of Public Morals, published at the end of July, deals, in four sections and a summary, with the moral and social, the educational, the hygienic, and the commercial aspects of the kinema. Not every part of the report is of professional interest, but the experience of a number of inspectors, directors of education, medical officers, and representative teachers is given in detail; and though these authorities are by no means agreed, yet their evidence, on balance, is full of encouragement and suggestion.

The difficulties and objections brought forward were chiefly as follows:—

(1) Kinema conditions are often far from hygienic. Ventilation is inadequate, while the glare and flicker, the rapidity of motion, and the concentration of visual attention promote eye-strain.

(2) It is affirmed that the first condition of education is mental effort, and that the dilu-

<sup>1</sup> "The Cinema: Its Present Position and Future Possibilities." xciii+372 pp. (Williams and Norgate.) 10s. 6d.

tion and peptonisation of the material presented render the child more difficult to instruct in other ways.

(3) The children have little appetite for educational films. The main interest is outside their school curriculum, and the residuum of information is small.

(4) The cost is out of proportion to the results obtained. Various makers, especially Messrs. Pathé Frères, have devoted much time and money to the production of scientific and educational films, but at a considerable financial loss.

The hygienic difficulties do not seem very formidable. It is obvious that ventilation can be forthcoming. It was pointed out by the ophthalmic expert who was examined that glare can be greatly reduced by the moderate illumination of all parts of the hall. Flicker depends upon the quality of the film and the control of the movement. A technical condition of this kind is sure of continuous improvement. The rate of motion is entirely under control and can easily be made equal to the natural. The concentration of visual attention is harmless, provided it is intermittent and not unduly prolonged. Finally, eye-strain is minimised if the child is seated not fewer than 20 ft. from the screen.

The second objection vanishes under a true conception of the educational use of the film. The kinematograph should be, first of all, an instrument of inquiry. The control of the time-factor permits of the analysis of mechanical and biological movement; and it cannot be doubted that a free use of this method will add much to our knowledge, and set many new problems before us. The ordinary camera will do this in some measure. For example, why does an electric lamp survive the passage of a bullet through it for a measurable period of time? The field is very wide and many inquiries will suggest themselves to teachers of natural science. All that we lack is time, patience, and the labour of an army of observers—hodmen of science they have been called—with the collation of their results. Again, the skill of craftsmen is fascinating to watch. What is it but a succession of ordered movements which have become almost involuntary by use, but of which each has an intention? The analysis of such movements could not fail to be illuminating. Metal-working, glass-blowing, wood-carving, ploughing, scything, milking, any highly skilled manual operation, would repay examination. It is impossible to milk on the principle that great strength returns the penny. There must be a definite sequence of hand, arm, and finger movements which have without doubt not only a mechanical, but also a physiological,

significance, and the facts cannot be interpreted until they are forthcoming. There is plenty of scope for mental effort in such inquiries, always with the purpose not only of getting information, but also of explanation and improvement in method. In the days to come, when every school has a department for history, economics, mathematics, pure science, engineering, biology, agriculture, music, and art, as well as for pure literature, and when the dominant note is not accumulation, but inquiry, we cannot doubt that the kinematograph camera and the film will find acceptance as honourable as the blackboard and the burette.

Such an employment of the camera and film would remove the third objection. We cannot be surprised that the so-called educational film does not compete in interest with humorous or sensational stories during hours which are supposed to belong to recreation. On the other hand, there is no doubt that those witnesses were right who held that when the film is used for purposes of summary, and still slides have been shown and the subject has been duly expounded by the teacher, the residuum is enlarged by the improvement in method. Is the residuum, then, always satisfactory, even when the work is on lines more respectable by antiquity and directed by most skilful teachers? Recent fiction, if one may believe it (which God forbid), teaches with copious detail and weighty foreword that the residuum of five years at a great boarding school is principally indolence, blasphemy, cunning, and vice. It would seem that a change of method could do no harm. It may be believed that it would do some good.

A similar criticism of the moral film is more persuasive. It is inevitable that, after watching a long narrative of ingenious crime and suffering virtue, memory should retain the feats of the villain rather than the brief conclusion in which wickedness is confounded and right prevails. The child recognises that it is merely a sop to convention, and, moreover, it does not accord too well with his own observation. He has perhaps seen his father strike his mother in anger a heavy blow. She retires whimpering and snarling to a corner or to the other side of a table. There was no irruption of detectives, district visitors, and constables wearing the hard felt hat and swinging the truncheon which are the unmistakable decorations of the American police. There was no apology and no touching reconciliation. Without doubt film stories, like any others, can be adjusted to the level of the child's understanding, and can be made wholesome in the general intention; but they can have little value as the channel of moral instruction.

The difficulty of cost is always with us, long as education committees vote trivial sums for the upkeep of the natural science work of schools in their charge, and cut down most modest requests for chemicals, etc., 60 or 70 per cent., the kinematograph may still seem to belong to the millennium.

The remedy is to be found partly in re-organisation. The country is spattered over by small schools which are doing the best work that is possible with the resources under their control, and of these the most valuable is the energy and devotion of their teachers. A number of these schools are redundant and might be amalgamated. The pooling of fees, grants, and minute endowments would make some provision for the improvement of material, and would be alone an advance in the right direction. Moreover, the exchange of films between schools under the authority, the formation of film libraries by education officers, and the like would reduce the cost very greatly. Still more effective would be the spread of the conviction that education on right lines is reproductive, that sowing is inevitably followed by the harvest, and that public instruction, boundless in strictness and scope, is as worthy of public support as public order or public health.

#### PROPOSED SALARY SCALES FOR LONDON SECONDARY SCHOOLS.

By ALEX. BLADES, B.A.

Chairman of the Salaries Sub-Committee, I.A.A.M.

THE Education Committee of the London County Council is to be congratulated on its prompt and comprehensive grasp of the principles underlying the new supplementary grants. For some time a well-marked uneasiness with regard to education has permeated the general public, and only, but surely, the man in the street has come to realise that in the teaching profession, as in all other branches of life, one cannot get the goods without adequate payment. This is an elementary business proposition and applies not merely to London, but also to the whole country. Unfortunately, a perusal of the scales that have appeared throughout the country as a result of the new grants shows that the majority of the authorities have realised neither the importance of education nor the real purpose of the supplementary grants. London, on the other hand, has ever been mindful of the connection between efficiency and remuneration, and, within the limits of its resources, it possessed a scale which in the past constituted the one bright spot in the country. With the additional funds at its disposal the Education Committee has lost no time in proposing a scheme for its secondary

schools which, although not attaining the ideal of the First Class Civil Service hinted at by Mr. Fisher, does, nevertheless, ensure an equitable disbursement of the money. By dating the proposed scheme back to January, 1917, the committee adopts the principle that a substantial part of the grant for 1916-17 shall be allocated to teachers who have worked during that year. Many provincial authorities might note this point.

The old scales were:—

(a) MEN.

(i) *Higher*: Initial, £150; annual increment, £10; maximum, £300, and £350 in special cases.

(ii) *Lower*: Initial, £150; annual increment, £8; maximum, £230.

(b) WOMEN.

(i) *Higher*: Initial, £120; annual increment, £10; maximum, £220, and £250 in special cases.

(ii) *Lower*: Initial, £120; annual increment, £6; maximum, £180.

The proposed new scales are:—

(a) MEN.

(i) *Higher*: Initial, £150; annual increment, £15 to £300, and then by annual increments of £10 to £400; further to £450 in special cases.

(ii) *Lower*: Initial, £150; annual increment, £10; maximum, £300.

(b) WOMEN.

(i) *Higher*: Initial, £120; annual increment, £10; maximum, £270, and in special cases to £300.

(ii) *Lower*: Initial, £120; annual increment, £8 to £216, and then to £220.

The initial salaries are very rightly left untouched, and the committee is to be commended for its foresight in endeavouring to make teaching a real profession instead of a trap for the unwary by the bait of a high commencing salary with comparatively small advance.

With regard to the men's higher scale, it is doubtful if the maximum efficiency can be secured by the bigger increment at the beginning of a teacher's career. The unanimous opinion of the teachers themselves is that the contrary is the case. With future teachers, probably the two systems will work out fairly equally, but present teachers are obviously at a disadvantage under the proposed scheme.

The committee, in common with most authorities, does not accept the principle of equal pay for men and women. In view of the laws of supply and demand, coupled with the fact that, as a general rule, the responsibilities of men are greater than those of women, the position of the committee seems quite logical.

The committee has followed Lancashire in treating qualified art teachers in the same way as other teachers—a tardy recognition of an obviously just principle.

The universal adoption of another excellent principle would remove a glaring defect in our

present system. In most secondary schools the difference between the salary of the headmaster and those of the assistants is out of all sane proportion. The committee's proposals will mean that the scale for headmasters begins where that of the assistant-masters ends, which is as it should be.

By far the most important of the principles adopted in the proposed scheme is the recognition of service in approved secondary schools other than those of the Council. Up to the present, half only of previous service has been recognised. There will still be limits to the application of the practice, but the adoption of the principle will undoubtedly form a great landmark on the road towards the ideal of a national system of transfer without loss of status, salary, and pension rights.

The London teachers, while welcoming the establishment of the proposed scale, found the present financial pressure so heavy that they were compelled to urge an immediate grant to meet the increased cost of living. Their thanks are due to Mr. Liversidge, who moved and carried through the committee the payment of a temporary additional increment for the present year. This, with the dating back mentioned above, will, if approved, provide something immediate to meet extra expenses.

The proposals mark a great advance in the educational progress not merely of London, but also of the whole nation. The Education Committee, and in particular Messrs. Cobb and Liversidge, together with the Education Officer, are to be congratulated on their performance of the task set them by Mr. Fisher.

In view of the fact that a Departmental Committee is at present considering the principles governing salaries in secondary schools, the proposals of the London Education Committee are undoubtedly of great importance and come at an opportune moment, because they not only deal with some of the principles which the committee will consider, but also give a decided lead with actual figures at a time when a great number of scales are in the melting-pot. Whatever may be the findings of the Departmental Committee, sooner or later the country will be compelled in its own interests to establish a scheme of fairly uniform salaries, and it is well that London is setting an example which the other authorities could follow with advantage. It is earnestly to be hoped that the result of the deliberations of the Departmental Committee, together with the practical lead given by London, will have the effect of raising salaries in the provinces, so that, when the time is ripe, there will be no serious obstacle to a national standardisation of salaries in secondary schools.

## RELIGIOUS INSTRUCTION.

### THE TRAINING OF THE TEACHER.

By JANE E. WILLS, B.D., S.Th.  
County School for Girls, Gravesend.

THE nature and quality of the religious instruction given in our schools has been discussed *ad nauseam*. We are weary of the questions and controversies that have grown up around it. Who is to teach? Who is to be taught? How is the work to be tested?

Yet there is one point that has hitherto strangely overlooked—the efficient and satisfactory training of the teacher. We find it stated by a committee which has spent three years in considering the subject that religious education is "imperilled by a rapid decline in the number of qualified religious instructors among the teachers." This, indeed, applies directly to the elementary schools. There is a grave indictment. But the charge may be brought with equal, if not greater, intensity regard to our secondary schools, and the more especially to which we look for the training of our elementary schools.

For religious instruction is the one subject on the curriculum in which adequate and thorough knowledge of the matter taught is not a *sine qua non*. No one would dream of volunteering to teach geography, or science, or history with the very small amount of trained and systematic scholarship which is accepted in the case of those giving such teaching. Too frequently the question is, not "Can you teach Holy Scripture?" nor "Are you qualified to do so?" but "Will you teach it?"

This is the case as regards not only intellectual equipment, but also the personal standard of devotion. This paper assumes, however, that the teaching of Holy Scripture ought not to be committed to any but spiritually minded persons with a definite religious belief, and goes on to contend for that soul-learning which will enable them truly and honestly to "give a reason for the hope that is in them." Wide reading and a grip of the subject as a whole and of its bearing on, and relation to, other branches of knowledge alone enable this to be done. It is a plea for the presence on the staff of one member who has made religious instruction a special study in the same way as others have done in science or modern languages.

For what is needed is that definite and complete training and knowledge which can be acquired only by thorough and far-reaching study of the subject in all its bearings and ramifications. This cannot be obtained by spasmodic and unsystematised reading or

king use of schemes and lesson outlines drawn up by someone else (what a confession of incompetence in any other subject!). Nor can it be acquired on the "form-system," in which the form master or mistress teaches scripture to one form only very often with relation to what goes before or after. The Education Term, like other holiday courses, is eliminating to thought, raises the standard, and inspires future effort, but it cannot be a substitute for that academic study which alone can give mastery in a subject..

First, there should be an adequate knowledge of the languages in which the Sacred Books were written, and specially of Greek. Still in New Testament Greek is not difficult to acquire, and the difference 'this aptitude makes in reading the New Testament is enormous. Moreover, without it, it is impossible to obtain any thorough understanding of the developments of Early Church history.

For there are two great lacunæ in the biblical and religious knowledge of most of us: (a) of the period between the Testaments, a period of the utmost importance, since its history explains the rise of the Jewish religion as set forth in the Gospels; and (b) of the period between the close of the Acts of the Apostles and the introduction of Christianity into Great Britain. The history of the first five centuries of the Christian Church is of incredible moment for the knowledge of the development of Church government and doctrine. We may confidently affirm that not a problem or difficulty has since presented itself which in one wise or another was not met with during that period. And for both (a) and (b) a knowledge of Greek is of prime value.

The usefulness of some acquaintance with Hebrew is too often overlooked—incalculable in realising the genius of the Old Testament. Indeed, we may compare the position with that of teaching the manners, customs, and literature of Rome without being able to read Latin. Such a position is almost unthinkable. But is it not nearly paralleled in the case of those who teach the Bible with no knowledge of the ancient languages?

Secondly, Max Müller has affirmed that he who only knows his own religion knows none. Every teacher of Holy Scripture should have some knowledge of the great non-Christian religious systems, of the religions of primitive peoples, and of religious growth and development. This knowledge is obtained in some part from the study of the Old Testament, but there are needed also the illustration and enlargement obtained from the study of other religions. Above all is such study necessary for us as citizens of the British Empire, and at this time when those of so many different

religions and beliefs are fighting with us under the same flag and for the same cause.

Lastly, there should be some training in mental and moral philosophy. In addition to the reading in logic, psychology, and ethics, which form part of the professional training of the teacher and are of special value in this context, there should be a course in the chief philosophic thought-systems, with immediate reference to their bearing on religion. This does not mean that these subjects will be even mentioned in our classrooms. Certainly moral instruction is inseparably bound up with religious, for a religious teaching apart from its practice would be valueless. But neither, as a rule, is Gothic or Old French taught in our classrooms, except in the senior forms of the largest schools; yet they are part of the mental equipment of the teacher of English or French. The insistent question for the teacher of religion is "What is truth?" and nothing should be omitted which shall cause him to be less ready for his task than his fellow who is teaching history or modern languages.

The course of study here mapped out can be undertaken only by the specialist. To many the idea of a specialist in religious instruction is repugnant.

It is objected that such a requirement is pedantic. Pedantic it need not be. For what we want is instruction in the doctrines and practice of religion, *not* in the history of the kings of Israel and Judah, or in a dreary catalogue of the places visited by St. Paul—good as such information may be in its proper place. Yet this is what many teachers are obliged to fall back on, because they do not know what else to do. Lessons are given on "Bible manners and customs" or on "outlines of Scripture history," or incidents are selected on which to base a moral, all of which are "that other which should not be left undone."

It is also maintained that it is essentially in the Scripture lesson that the form mistress finds the readiest way to the hearts of her pupils. Her class is in the most receptive mood, and this is her special moment for influencing it. To take it from her would lessen her influence. Here is a point that may be queried. The influence obtained by any mistress depends on her personality, not necessarily on her subject. This system also not infrequently means that the period which should be devoted to the Scripture lesson is used for form-work or for giving moral "pi-jaws" on sins of omission and commission.

Further, it is objected that religious teaching stands on a different level because religion is the affair of everyone. All have received re-

ligious instruction, and presumably, unless they object, are qualified to give it.

The fallacy here is more difficult. Certainly religion is the affair of all who profess it, as regards its practice. But all are not necessarily qualified to teach it.

In this context another difficulty presents itself—the need for economy. Specialists are required in the so-called secular subjects on account of the exigencies of public examinations and school inspections. And though we may deprecate it in theory, we all know that in practice subjects offered for examination tend to crowd out others in the curriculum, and must necessarily be most considered in staffing. This is especially the case in the smaller schools, where a specialist cannot be appointed for each subject.

Indeed, the question of most importance at the moment, and particularly in the secondary schools, is not so much that as to denominational *versus* undenominational teaching, pressing and important though this may be. The most important points are that an adequate place should be found on the time-table for religious instruction, two periods a week being the minimum; and, as I have tried to show, that we should demand a standard of knowledge and efficiency in the teacher at least not lower than that required in other subjects.

Such special knowledge is most adequately provided by a university degree. The University of London has been the pioneer, but most universities now open their theological courses to women as to men. The London pass degree in theology (which must be taken before honours can be attempted in a theological subject) includes Greek, Hebrew, Church history, Christian doctrine, and philosophy of religion as its compulsory subjects, while a sixth must be selected from Christian ethics, comparative religions, and patristic studies. In the intermediate examination classical Latin and Greek and mental and moral philosophy are required.

For the Archbishop's diploma in theology Hebrew is not compulsory, but a high standard of Greek is expected. Five subjects must be taken, and the standard is that of a university degree.

Certificates of lesser standing are issued for proficiency in religious knowledge by the University of London and the Cambridge Syndicate. Though in no way comparable with a degree, they are valuable, and might be taken, at some cost of time and energy, by those already engaged in teaching.

It is far better that religious instruction should be given by an adequately trained member of the staff than by anyone coming

in from outside. And so far as girls' schools are concerned, it is preferable that such instruction should normally be given by women.

Formidable as the subjects for a degree in theology sound, the amount of reading is no more than that required by the teacher of any other subject in the curriculum. Surely no less should be asked of those giving religious teaching when its far-reaching influence on life and conduct is weighed and considered. For the specialist in religious instruction, what is demanded for a pass degree should be the minimum. Such qualification can be gained by those already engaged in teaching. Of course, this is not an easy path and involves much hard work and thought and much burning of the midnight oil. Even in view of the fact that there is at present little demand for the specialist *per se*, perhaps we cannot expect such courses to be taken in quite the same way as students turn to other branches. Yet the value of such work is enormous. Is it too much to ask that one hand those in authority should gradually raise the standard of qualification required of those engaged in teaching religion in the schools, and that on the other the teachers, though at great sacrifice of time and leisure, should endeavour to improve their mental equipment, resting content with nothing less than the level they maintain in other subjects? Much struggle and sacrifice doubtless; but here surely, in view of its surpassing importance, we may re-echo the aphorism of Plato: *καλὸν γὰρ τὸ ἀθλὸν καὶ η ἐπίπεδη μεγάλη*

#### PERSONAL PARAGRAPHS.

**M**R. H. G. ABEL, headmaster of Barnstaple Grammar School, has been appointed headmaster of the Central Foundation School, Cowper Street, London, E.C., in succession to Mr. W. H. Wagstaff, who has retired after fourteen years' service. Mr. Abel was educated at St. Olave's School, Southwark, and Christ's College, Cambridge. He was senior classical master at Wakefield School from 1899 to 1910, when he became headmaster of Barnstaple School.

\* \* \*

MISS C. E. RIGG is, as we announced last July, retiring at Christmas from the position of headmistress of the Mary Datchelor School for Girls, Camberwell, a position which she has held for forty-one years—that is, from the foundation of the school in January, 1877. Mary Datchelor died in 1720 and left considerable property, part of the income from which was used to found this school. The Clothworkers' Company took

ver in 1894. The present managers of the school include representatives of London University, the London County Council, and the Camberwell Borough Council. When the school was opened under Miss Rigg's direction there were only thirty girls. In two years the numbers rose to more than 200, and new buildings were necessary; to these buildings others have been added, and the school now provides accommodation for some 500 girls.

\* \* \*

THE following resolution was passed by the council of the Girls' Public Day-School just after the death of Miss Mary Gurney, which we referred last month:—

The council desires to place on record its profound sense of the irreparable loss to the Trust and to the cause of women's and girls' education in the death of Miss Mary Gurney. She was one of the founders of the Girls' Public Day-School Company (now the trust), and for forty-five years she made its schools the chief care of a most strenuous and devoted life. Her recognition, now general, but long in coming, that girls, no less than boys, are entitled, both in their own and in the national interest, to the best and most thorough intellectual, as well as moral, training that can be given is largely due to the faith, the enthusiasm, and the untiring efforts of a few able women who were in advance of their time, and of whom Mary Gurney was among the chief. No one had a higher standard of education or a truer vision of what education means, and her ideals were thought out, nor would she ever compromise them.

Her great ability and the force of her personality, together with her thorough knowledge both of the schools and of the business of the Trust, made her, through a long course of years, probably the most influential member of the council, and it always relied on her wisdom.

But in paying homage to Miss Gurney's great character and services the members of the council would wish to add a warm tribute of affection. She was in truth one of the most lovable of women. Her beautiful and entirely unselfish nature, her unfailing sympathy, and a wonderful tenderness, rare in so forceful a character, made it impossible for those who knew her not to love her, and among the mistresses of our schools, as among her colleagues, all hearts went out to her. Her death leaves a blank that can never be filled. But she died full of years and honour. She had lived to see her hopes and ideals for women well in course of fulfilment, and her work lives after her.

\* \* \*

THE death is announced of Miss H. M. Jones, first headmistress of Notting Hill High School. Miss Jones began her educational work by opening a school in Guernsey. In 1873 she came to London as head of the Notting Hill High School, which was the second school opened by the Girls' Public Day-School Trust. The success of the school was very

great, thanks to the character, influence, and enthusiasm for the higher education of women of its headmistress. Miss Jones was one of the earliest members of the Association of Headmistresses, founded by Miss Buss in 1874, and was its president in the years 1897 and 1898. She also gave evidence on behalf of the association before the Royal Commission on Secondary Education, and took great interest in the training of teachers.

\* \* \*

MR. T. A. WRIGHT was buried at Sandown, Isle of Wight, on October 19th. Education in the island is the poorer. Since the passing of the Education Act of 1902 Mr. Wright had taken an active part in the administration of local education. It was largely due to his influence that the then satisfactory scale of salaries for teachers in the secondary school of the island was adopted. Mr. Wright was a travelled and intellectual man, who took a broad and intelligent view of the problems of the day.

\* \* \*

MR. STEPHEN CORNISH is now retiring from the living that he has held since he gave up the headmastership of Walton Lodge in 1896. Walton Lodge was one of the best-known preparatory schools. It was distinctly a Church school, and the religious atmosphere was real, simple, and natural. Among many well-known men who attended the school in the earlier days of its popularity were Lord Bath, Lord Beauchamp, Sir Charles Hobhouse, Bishop Norris, and Mgr. Hugh Benson. A correspondent writes to the *Times* of Mr. Cornish:—"Everyone who knows him speaks of him by his Christian name. That alone will show the kind of personal attraction that he has exercised. Full of human sympathy, he is one of the ever young."

\* \* \*

MR. W. A. NEWSOME, editor of the *A.M.A.* since 1910, has been compelled to relinquish his work for our contemporary owing to a breakdown in health. Mr. Newsome has systematically overworked for many years. He has taken a leading part in the work of the Assistant-masters' Association for some twenty-five years, and during the past three years he has, in addition to his other work, been acting as headmaster of the Stationers' School, Hornsey.

\* \* \*

DR. EVAN SMALL has been appointed secretary of the Joint Scholarships Board in succession to Mr. H. Bendall, once headmaster of Blackheath School and for many years secretary of the Headmasters' Association. Unfortunately, Dr. Small's health has

prevented his taking up his duties. Dr. Small is a native of Nottingham and received his early education at Nottingham High School. After the passing of the Education Act of 1902 he became the Director of Education for Derbyshire.

\* \* \*

THE REV. E. F. M. McCARTHY, for many years connected with the King Edward's Foundation at Birmingham, died on November 4th at the advanced age of seventy-nine. His first scholastic appointment was that of mathematical master at King Edward's School, Norwich. While holding that appointment he was ordained deacon, and in the following year priest, by the Bishop of Norwich. In 1864 he went as a master to Bedford Grammar School, and in 1866 to Birmingham as second master of King Edward's School. During the remainder of his life he had been employed in educational work in the city. In 1878 he became headmaster of the Middle School, and in 1882 headmaster of the Five Ways Grammar School. Mr. McCarthy was a member of the Birmingham School Board in 1875, and remained a member until the board was abolished in 1902. Mr. McCarthy's work has left a lasting impression on the boys of Birmingham. He possessed the power of getting the best work out of the boys with a minimum of effort, and a maximum of good order with a minimum of punishment.

\* \* \*

THE President of the Board of Education has strengthened the Departmental Committee which is inquiring into the principles which should determine the fixing of salaries for teachers of secondary and technical schools by the appointment of the Rev. C. J. Smith, headmaster of the Latymer Upper School, Hammersmith. This appointment will give great satisfaction to the heads of secondary schools throughout the kingdom, who know and appreciate the sound common-sense of the new member.

\* \* \*

MISS EDITH BURRAS, now second-mistress of the Manchester High School, has been appointed headmistress of the new school which the Bournemouth Education Committee is establishing in January. Until its new building can be erected after the war, the school is to be housed in the excellent buildings of the Technical School of the town. Miss Burras is a modern language specialist, with the Oxford qualification, and was a Founders' scholar of the Royal Holloway College. She has been an energetic member of the committee of the Modern Language Association.

THE Assistant-masters' Association has now elected its chairman for 1918. Its choice has fallen upon Mr. S. A. Birks, who has for many years done a great deal of hard work for the association. Mr. Birks is an assistant master of the County School, Sutton, Surrey, an appointment he has held since 1901.

\* \* \*

LAST month I recorded the death of Lieut. Arthur Walsh. Fortunately, I made a mistake; this officer's father tells me that though his son was wounded on September 20th he is quite well again, and is, moreover, now Acting-Captain Walsh. I am glad to be able to offer double congratulations to my correspondent and to his son.

ONLOOKER.

#### CONSIDERED SUGGESTIONS FOR EDUCATIONAL REFORM.

##### PROS AND CONS.

###### I.

THE memoranda put forth by bodies concerned with education summarising their policy are so numerous that most of us can scarcely keep count of them, much less digest them. Excerpts from some seventeen recent expressions of opinion, arranged under heads and presented with notes from Mr. Fisher's Bill and other sources, may interest readers of THE SCHOOL WORLD.

In the hope of promoting peace, points have been selected showing our unhappy divisions rather than those on which all of us are agreed. *Du choc des opinions jaillit la lumière.* There is no hope for education until political quarrels yield to the benefit of the children.

The reports fall naturally into three groups:—

(1) Those of purely professional bodies whose members see more of the results of the present educational system than outsiders, and whose suggested remedies vary as much as theirs.

(2) Those of officials, whose one idea is organisation. "Uniformity must tire at last, though it is a uniformity of excellence," said Johnson.

(3) Those of educationists and associations such as the W.E.A., whose views must be respected, even if they are contrary to logic.

It is not necessary to say anything here about the Bill. Every excerpt is a direct or indirect comment on it. The success of the Bill depends upon the supply of teachers required to carry out its provisions. On this point criticism will be found under the heading "Teachers" (xviii). Finally, nothing will put

ir educational machinery in order until some  
one arises who will break down Nehushtan  
and rear a structure from the tower of prepara-  
ry education to the fenced cities of the  
universities. Now is the appointed time.  
Here is the prophet?

Our extracts, as a rule copied verbatim, in  
one or three cases condensed, have been  
taken from the following sources:—

- (1) Assistant-masters' Association. "Educational  
Key." (I.A.M.)
- (2) Board of Education Report. (Brd. of Ed.)
- (3) Civil Service Examinations Report. (C.S.Exx.)
- (4) Directors and Secretaries for Education. "To-  
wards an Education Policy." (Assoc. of D. and S.)
- (5) Domestic Subjects, Memorandum of Teachers of.  
(Mem. T. of D. Sub.)
- (6) Education Committees. Report of Executive  
(Ed. C. Assoc.)
- (7) Education Officers' Association Policy. (Assoc.  
(Ed. Offs.)
- (8) Education Reform Council Report. (Ed. R.C.R.)
- (9) Mr. Fisher's Bill. (F.'s Bill.)
- (10) Headmasters' Association. "Educational  
Key." (I.A.H.M.)
- (11) Headmistresses' Conference. (Hd. Mistr.)
- (12) British Science Guild. "National Education."  
(B.S.G.)
- (13) Teachers' Registration Council. "Resolutions."  
(R.C.)
- (14) Technical Institutions Association. (Assoc.  
(T.I.A.)
- (15) The *Round Table* (June). "Education of the  
Citizen." (R.T.)
- (16) University of London. "Memorandum." (Univ.  
(Lond.)
- (17) Workers' Educational Association. (W.E.A.)

The memoranda are referred to in brackets  
under the abbreviated titles, and have been  
analysed under the headings given below:—

- (i) Administration; (ii) character training; (iii) chil-  
dren under school age; (iv) Civil Service examinations;  
(v) continuation schools; (vi) curriculum; (vii) educa-  
tion in schools; (viii) examinations; (ix) finance; (x)  
general; (xi) governing bodies; (xii) health, care of;  
(xiii) inspection; (xiv) L.E.A.s; (xv) organisation of  
schools; (xvi) scholarships; (xvii) secondary schools;  
(xviii) teachers: training, salary; (xix) teaching; (xx)  
university education.

#### (i) ADMINISTRATION.

##### (a) Central.

- (1) The national system of education should be ad-  
ministered by a Council of Commissioners, consisting  
of men versed in teaching or in organising education  
or in educational finance, nominated by the T.R.C. and  
by professional, technical, industrial, and commercial  
bodies, presided over by a Minister of Education of  
Cabinet rank, with a Permanent Secretary, both of  
whom must have experience in the work of education.  
(I.A.M.)
- (2) The Minister of Education should be placed on a

level in position and salary with the principal officers  
of State. . . . The Board of Education should be in a  
position to secure the co-ordination of the work of the  
L.E.A.s. (3) We should, however, regard with grave  
misgiving any readjustment of financial responsibilities  
which would tend to establish teachers in the status  
of Civil servants. (I.A.H.M.)

(4) The State should be directly responsible for the  
provision of salaries and pensions of teachers.  
(I.A.A.M.)

(5) For the purpose of co-ordinating the activities of  
L.E.A.s with those of the universities and institutions  
for higher education, the country should be divided  
into educational provinces, the areas of which should  
be larger than those of the L.E.A.s (Ed. R.C.R.)

The reports of the associations of officials  
are silent on the point of provincial councils.  
Naturally a body does not wish for any ex-  
ternal co-ordinating authority. Pride of  
place is always self-sufficing; it would rather  
wreck the Bill than yield a point.

#### (b) Local.

(1) That each L.E.A. be required to submit to the  
Board of Education a complete scheme of education  
for its area, together with estimates of the cost.  
(W.E.A.)

(2) It shall be the duty of the council of every county  
and county borough to submit to the Board of Educa-  
tion, when required, schemes showing the mode in  
which their duties and powers under the Education  
Acts are to be performed and exercised. . . . An  
authority for Part iii. shall make arrangements for  
co-operation with Part ii. authorities in respect of the  
supply and training of teachers and submit schemes  
when required. (F.'s Bill.)

(3) The country should be divided into provinces,  
each centring round a university, controlled by a pro-  
vincial council presided over by a member of the  
Council of Commissioners. On these provincial coun-  
cils the teaching profession and representatives of local  
interests should halve the seats. (I.A.A.M.)

(4) The present L.E.A.s are timid in the face of  
ratepayers; the smaller ones especially lack acquaint-  
ance and sympathy with the need for educational pro-  
gress. . . . We are of opinion that a system of pro-  
vincial councils for education, divorced from other local  
interests, would place education in an inferior position  
and alienate public sympathy. (I.A.H.M.)

(5) The Board of Education may provide by scheme  
for the establishment and incorporation of provincial  
associations for such areas as the Board may direct.  
(F.'s Bill.)

(6) The Free Libraries and Museums Acts should  
be suitably extended to county areas and should be  
administered by county education committees. (Assoc.  
of D. and S., and Assoc. Ed. Offs.)

(7) I am not proposing to supersede or to revolu-  
tionise the educational settlement of 1902. . . . The  
Bill assumes that the business of carrying on the edu-  
cational work of this country will continue to be en-  
trusted to the authorities on whom it was devolved  
by that Act. We do not even propose, except with  
special Parliamentary sanction, to merge the non-

county boroughs and urban districts into the counties. . . . I am not proposing to deal with the scholarship system, the training college, or libraries. (Mr. Fisher in the House of Commons.)

It may be that the nation will require a more definite settlement of the question of provincial councils and insist on none at all, or on a scheme decided by Parliament. Since the public has learnt how public offices work, it distrusts departmental preference of form to cause, and of time-serving to efficiency. As a result of experience, departmental creation of provincial associations will probably be opposed and rejected, possibly in favour of statutory councils.

Even the *Times*, speaking of a Government department recently, said: "Its motive seems to be at least as often the convenience of the department as the safety of the realm."

The Board of Education, it is said, has lately been trying to force school governors to submit their appointments to it for confirmation.

#### (ii) CHARACTER TRAINING.

(1) Seventy-two authorities out of 107 favour such a course of physical training for boys in elementary schools as would be an advantage to them later, on joining cadet corps or similar corps. (Ed. C. Assoc.)

(2) That no drills of a military nature be permitted.

That education in such schools should contain ample provision for physical well-being, including organised games and school meals. (W.E.A.)

(3) Time should be provided in the school curriculum for military training. (I.A.H.M.)

(4) While the work of the classroom affords much opportunity of developing individual character . . . the development of a corporate school life is an essential part of the training for the wider life of the community. Senior boys must be taught to accept responsibility and to control and lead others. It is of the utmost importance that all children should receive a sound religious training, both at home and at school. (I.A.H.M.)

(5) The Bible should be used in the teaching both of literature and morals. Valuable aids to moral training are to be found in discussion, debate, and various forms of self-government. Every possible means should be employed for bringing the school into direct touch with life. (I.A.M.)

(6) Part ii. and Part iii. authorities may, with the approval of the Board of Education, make arrangements to supply or maintain or aid holiday or school camps, physical-training centres, school baths and swimming baths. (F.'s Bill.)

(7) It is well to quote a few remarks (Ed. R.C.R.) on character training: "We must admit certain dangers in the present attitude of unconditional acceptance of the place of games in our education. The results which arise from the tendencies referred to below often counteract the real benefits which, but for them, might be realised: (i) The publicity with which athletic success is surrounded. . . . (ii) Excessive stimulation of

the competitive sentiment. . . . (iii) The danger that owing to over-organisation and excessive training, the recreative element in school games should disappear."

If the nation takes to mothering games still, it will surely turn out a stepmother at the job. Further, there is far too much stress laid on the washing of cups and platters, to the neglect, by the Bill, of weightier matters.

#### (iii) CHILDREN UNDER SCHOOL AGE.

(1) Provision for the care of children under school age should be increased through the instruction of parents in the conditions affecting the healthy development of infants and the establishment of nursery centres and crèches where needed. (I.A.H.M.)

(2) Supported by the Assoc. of Hd. Mistr.

(3) Nursery schools for all children between two and six, whose parents may wish them to attend, as demanded by the W.E.A.

(4) Children under five should be taught in nursery schools or as a section of the infants at the option of the L.E.A. (Assoc. of D. and S.)

(5) I propose to encourage the establishment of nursery schools for children under five, and, when the supply of these admits, to empower L.E.A.s to raise the age for elementary education to begin at six. (Mr. Fisher.)

(6) That we reaffirm our belief that the provision of nursery schools should be compulsory upon the local education authorities. (W.E.A., N.W. Branch. Resolutions on the Bill.)

#### (iv) CIVIL SERVICE EXAMINATIONS.

(1) Competitive examinations for First Division clerks should be so modified that an adequate proportion of those appointed must have had mathematical or scientific training. (Univ. of Lond.)

(2) That Government examinations, if not directly on the subjects of the Service, should include such science subjects and syllabuses as to give science candidates an equal chance with literary students. (Assoc. T.I.)

(3) It is a matter of urgent necessity that the C.S. examinations should be remodelled and brought into organic relation with the education of the country. (I.A.H.M.)

(4) A *viva voce* test is proposed and certain alterations suggested that give opportunities to students of the newer universities. The committee points out that faith in competitive examinations is not what it was twenty years ago. (C.S.Exx.)

When we read in the report of the committee: "The *viva voce* examination should be a test, by means of questions and conversation on matters of general interest, of the candidate's alertness, intelligence, and intellectual outlook, his personal qualities of mind and mental equipment," we feel that before long an entirely new form of examination will arise and scatter the old memory-testing inquiries as a working party caught by a "tank."

## (v) CONTINUATION SCHOOLS.

Part-time education should continue (from four-) until the age of at least seventeen, in the day-, for an average of three half-days per week or an equivalent period per annum. (Ed. R.C.R.)

The number of hours to be devoted to it should minimum of eight hours a week (320 in a year) working hours. (Assoc. of D. and S.)

Continued education should be for not fewer than hours a week. (Assoc. T.I.)

Not fewer than nine hours in each week. (R.C.)

Twelve hours a week for forty weeks. (I.A.H.M.)

Not fewer than twenty hours of daylight in each week. (Hd. Mistr.)

The total hours of labour and schooling should exceed forty-eight a week. (Assoc. Ed. Offs.)

Not fewer than twenty hours a week, including time spent in games and meals, with maximum twenty-five working hours weekly. (W.E.A.)

Attendance at a continuation school, between m. and 7 p.m., must be for 320 hours in each year, eight hours weekly for forty weeks. (F.'s Bill.)

Further, we offer our uncompromising opposition any attempt to secure the recognition of works' schools as places of continuation education within the meaning of the Bill. (W.E.A., N.W. Branch. Resolutions on the Bill.)

The diversity of opinion as to the time to be devoted to work in continuation schools is remarkable. While many will consider sufficient the eight allowed by the Bill, most people will regard the demand of the mistresses for twenty hours weekly as excessive, and will look more favourably on the demand of the W.E.A. and prefer their suggested length of working hours to that of the Assoc. Ed. Offs., even though backed by the Assoc. of D. and S.

## (vi) CURRICULUM.

1) The function of educational administration is to widen opportunity. The function of the school is to develop a sense of obligation to the community and to foster individual aptitude. (T.R.C.)

2) The aim of education should be to secure the healthy physical, mental, and moral development of the child, so that he will take his place in the community as an efficient citizen. (I.A.A.M.)

3) "The ultimate aims of a national system of education should be to train men and women for the advancement of the State." ("Compulsory Cont. schools in Germany," Brd. of Ed. pamphlet 18, p. 23.)

4) Physical education should include drill and instruction in physiology and hygiene. Schools should be under medical supervision. In mental and moral education greater attention should be paid to the needs of the average boy than at present. After the age of thirteen the pupil's appreciation of the rights and duties of a citizen should be developed. (I.A.A.M.)

5) The teaching of natural science (including physics and chemistry) should be compulsory in secondary schools, for boys as well as for girls. (Univ. of Lond.)

(6) A place for physical training should be found in the school time-table. . . . One of the most serious dangers to secondary education lies in the overcrowding of the time-table through the conflicting demands of an ever-increasing number of subjects. (I.A.H.M.)

(7) That in each large centre of population there shall be at least one school giving preliminary preparation for a commercial career. (Assoc. T.I.)

(8) Special technical day-schools, in accordance with local needs, should be established in industrial centres for boys and girls between thirteen and sixteen years of age who wish to enter the technical (including engineering, chemical, and artistic) industries at the age of sixteen. (Univ. of Lond.)

(9) That no definite vocational bias be introduced in schools before the age of sixteen. (W.E.A., N.W. Branch. Resolutions on the Bill.)

(10) It is understood that the necessary arrangements will be made in all cases for religious and moral instruction. In all schools there should be great attention to English, spoken and written. (Ed. R.C.R.)

In support of the second part of this last extract it is only necessary to quote from the programme of educational reform put forth by one body whose resolutions appear in other parts of this paper: "That the examinations of the Civil Service should include such science subjects and syllabuses, and should be *so marked as will give* the student with a scientific training an equal chance with a student who has had a literary training."

As regards the other suggestions, all, except No. 10, come short in this particular: they offer nothing that will train the young in the principles of truth and honesty. Throughout the country lying and cheating and stealing are far too prevalent school vices—and that not in low-class schools alone.

## (vii) EDUCATION IN SCHOOLS.

(1) That which occupies the mind enters into the conduct, just as that which is near the heart invades the intelligence, and what enters into conduct fashions fate. It is not safe in educating citizens to think of nothing but industrial and commercial success and to forget morality. (R.T.)

(2) Elementary education is the broad base on which a true system of all higher education must rest. It will profit us little to raise the apex of our education so long as the broad base is unsound.

Manual work and exercises involving initiative (such as drawing, manual work for boys, and domestic subjects for girls) should be a prominent feature of the curriculum throughout the school. From twelve to fourteen years of age, while continuing the general education of children, the curriculum should contain provision for subjects of a practical "vocational" character without any specialisation. (B.S.G.)

(3) In all schools instruction should, where possible, be given by practical or experimental methods, and the scientific method of the laboratory and the workshop should be employed, so far as possible, in the ordinary classroom. (B.S.G.)

It is not clear what is meant. There are some six million elementary-school children, about a quarter of a million secondary-school children, and a few thousand university pupils. Is all land fit for growing wheat? Are all climates alike? Do all races possess the same characteristics? Then why impose uniformity on our family of mankind? Unless the elementary-school child with talents is placed in a secondary school at an early age, leaving his slower mates to their suitable training, he will never receive teaching able to develop "the physical, intellectual, moral, and artistic qualities inherent in his nature," and to place him "afoot and light-hearted on the open road to the university." Both there and in the world he must be equipped to face competitors whose preparation has begun at the earliest age. "The great majority of the young people after leaving the elementary schools have to go to work for a living." They require a system from the first, and it must be a good one, but the great thing is to select children fitted for a prolonged educational course and to see that they get it. An elementary education extends to fourteen years of age, a higher from before ten to over twenty. A building of ten stories or more cannot be raised on a foundation scarcely strong enough to carry one of four.

(4) There is much to be done in the direction of discriminating the lines of development suitable for town and country, and for districts which derive a special character from the predominance of particular industries and occupations; and this bears upon the organisation of all education, but especially upon that part of it which immediately succeeds the elementary stage. (I.A.H.M.)

But it must be remembered that an endowed grammar school in a village may not have a single potential farmer in it, while a town school may not produce more than five or six pupils at a time intending to follow the same calling. A distinctive agricultural, technical, or commercial bias can be logically given only to special schools, which are not expected to provide education for all comers and are, in fact, non-local schools.

#### (viii) EXAMINATIONS.

(1) All examinations should be based on curricula, not *vice versa*. All examiners should have had considerable experience of teaching in secondary schools. (I.A.A.M.)

(2) Professional bodies as well as universities should agree to accept, without further educational tests, students who through inspection and through examination can be certified to have reached an approved standard. . . . Acting teachers should be adequately represented on examining bodies. . . . The school's estimate of the work of individuals should be taken

into account for the awarding of certificates (I.A.H.M.)

(3) The work of education cannot be effectively carried on without a reduction in the number of examinations which may be taken in schools. (Hd. Mistr.)

(4) However enforced, compulsory subjects should be reduced to the barest minimum of requirements necessary for the conduct of life. If compulsory Greek is inadvisable, compulsory science or compulsory mathematics is equally to be deprecated. (Ed. R.C.R.)

(5) A system of school certificates should be established for children who complete satisfactorily the course (1) of an elementary school, or (2) of a re-named, approved, secondary school.

The certificates should be based not only upon examinations, but also upon reports by the teachers as to the ability of the pupils. (B.S.G.)

It is as difficult to make a nation scientific by legislation as it is to make it sober. Much may be done by wise guides, but less will be done by forcing science on everyone than by encouraging those who take to it naturally.

There are naturally defects in the Bill: one concerns teachers and will be dealt with presently; another has to do with examinations. Until there are only three examinations allowed to be held, managed by the State—viz., (1) labour certificate at fourteen, (2) intermediate certificate at sixteen, (3) senior certificate at eighteen—attempts at educational reform cannot but fail.

(See the comments of the report of the Civil Service Examination Commission, § iv, above.)

#### (ix) FINANCE.

(1) Grants should be given as a proportion of L.E.A.s' net expenditure, the proportion to be determined by the Board, but in no case to be less than 50 per cent.; there should also be an adjusting grant to meet the case of necessitous or heavily rated areas. (Assoc. of D. and S.)

(2) That each L.E.A. should be required to levy a rate for education of one shilling in the pound or such lesser sum as may entirely meet the cost of education within its area. That of all approved expenditure beyond the amount yielded by the fixed rate, 75 per cent. should be contributed by the Imperial Exchequer. (Assoc. Ed. Offs.)

(3) That 75 per cent. of the total cost of all education approved by the Board of Education be met by the National Exchequer, and that the Board be empowered to reduce the grant where (certain conditions are not carried out) . . .

That special grants must be paid to populous areas of low rateable value. (W.E.A.)

(4) For the existing system of grants for education should be substituted a grant-in-aid based on approved expenditure and having regard to the necessity of the area. (Ed. R.C.R.)

(5) No area with a population of fewer than 5000 should, as a rule, be recognised as the area of a separate L.E.A. (Ed. R.C.R.)

(6) The cost of pensions, apart from the contribution

teachers, should be borne by the National Exchequer.  
H.M.)

(1) The establishment of a satisfactory pensions scheme for teachers in secondary, technical, and other schools at present outside the State scheme of pensions must be left to a separate measure. (Mr. Fisher in the House of Commons.)

(2) "Thirdly (said Mr. Fisher), we provide in the Bill for the consolidation of all grants made for elementary education. It has long been recognised that a block area grant made to the L.E.A.s in respect of the educational system is more satisfactory than the number of different grants allocated on the basis of particular schools and particular subjects of study."

(3) We liberate the county authority from the limitation of the twopenny rate. (Mr. Fisher in the House of Commons.)

This question of rates is far too much in evidence. A Part ii. authority joins a Part iii. authority in taking over a secondary school. When settling the age of admission each authority tries to jockey the other; efficiency has no say in the matter. Part iii. authorities wish to keep as many children out of the elementary schools, for which they pay, as possible, and so desire a low entrance age to secondary schools. Part ii. authorities, which maintain the latter, urge a high age entry to save money. In either case the nation pays and the children may lose. It is not right that the advantage of the children should be sacrificed by such conflicts.

#### (x) GENERAL.

(1) Adequate facilities and liberal financial aid should be provided for scientific and industrial research in advanced technical institutions and universities. (Assoc. of D. and S.)

(2) The efficient development of higher technological education demands organisation so as to provide for the different requirements and conditions of (1) future leaders in industry and invention; (2) workmen, men, and apprentices who are already engaged in industry; (3) boys between the ages of about fourteen and sixteen who intend to enter upon industrial work about the age of sixteen. (B.S.G.)

(3) This conference affirms that the object of educational reform is not attained until a broad highway is established from the elementary school to the university. (W.E.A.)

(4) The association desires to place on record its approval of Mr. Fisher's recognition of the claim of the individual upon the State for a complete provision of educational opportunity. (Hd. Mistr.)

(5) The industrial workers do not want education in order that they may become better technical workmen and earn higher wages; they do not want it in order that they may rise out of their own class. They want because they know that in the treasures of the mind they can find an aid to good citizenship, a source of pure enjoyment, and a refuge from the necessary hardships of their life. (Mr. Fisher in the House.)

Compare with this the following extract from the *Times*:—" [This] does not seem to be consistent with the fact that there are still 108 secondary schools, enjoying the higher grants of the Board of Education, which are not required to offer the normal free provision to 25 per cent. of the number of entrants in the previous year. Fifty-five of the 108 schools were required to offer only 10 per cent. of free places." See also § xvii, to follow.

(To be continued.)

#### BRITISH DECIMAL COINAGE.

THE demand for the simplification of our present system of coinage continues to make headway, and many influential bodies are contemplating taking steps to secure the passage of the necessary legislation. The efforts of the Decimal Association have been reinforced by the recommendations of the Institute of Bankers and the Association of Chambers of Commerce, and all these three bodies are in agreement that the desired change can best be accomplished by retaining our present £ sterling as the monetary unit, and by dividing it by 10, 100, and 1,000 instead of by 20, 240, and 960 as at present.

A step towards decimalisation was given when the florin was coined (as it represents the exact tenth part of the £), and most of our existing coins down to and including the sixpenny-piece are available and suitable for incorporation in a decimal system of British coinage without any alteration in their respective values.

Efforts to divide the florin into 100 parts and thus arrive at a complete decimal system of coinage, notwithstanding its manifest advantage, have hitherto been beset with difficulties because the change involved a slight reduction in the face values of the penny, halfpenny, and farthing.

The Decimal Association (acting secretary, Mr. E. Merry, Finsbury Court, Finsbury Pavement, London, E.C.2) has recently issued a circular explaining the advantages of decimal coinage and discussing the whole question of the most suitable monetary unit for a British system. With the object of clearing the points at issue, we reprint the circular for the information of those of our readers who are interested in the teaching of commercial arithmetic.

**CHOICE OF UNIT.**—For practical purposes all efforts to rearrange our coinage system on the decimal basis may be classified under two main groups, viz.:—

**Group "A."**—Recommendations to adopt a monetary unit which would retain our existing £ sterling at its present value either as the unit itself or as the exact multiple of a new unit of smaller value. This group may be considered to include as alternative units our existing sovereign, half-sovereign, double florin, florin, and shilling, and they all possess the common disadvantage of involving an alteration in the values of our existing bronze coins, because our present penny is not a decimal sub-multiple of the £ sterling.

**Group "B."**—Recommendations to adopt a new monetary unit which would retain our existing bronze coins at their present values. This group may be

considered to include as alternative units a new "Pound" of 200 or 250 pence, an "Empire" or "George" of 100 pence, a "Crown" or "Dollar" of 100 halfpence, a new "Florin" of 100 farthings, and a new "Shilling" or "Franc" of 10 pence. These units all possess the common disadvantage of involving the ultimate abandonment of the £ sterling, because it is not a decimal multiple of any of our existing bronze coins.

**SOVEREIGN versus DOLLAR.**—It is perhaps not too much to say that this wide range of choice may now be narrowed down to two alternative units—one from each group:—(a) Our present unit, i.e. the £ sterling, but divided into 1,000 "Mils" instead of 960 farthings.

(b) A new "Crown" or "Dollar" (equal to 100 half-pennies, i.e. 4s. 2d. of our present currency) divided into 100 cents.

The difficulties incidental to the retention of the £ sterling may be summarised as follows:—(1) Since the hundredth part of a sovereign (viz. 2½ pence) is too high in value for our smallest coin, all smaller values would have to be expressed as thousandths of a pound, involving the use of three figures after the decimal point. No other first-class nation employs more than two figures after the decimal point.

(2) A thousandth part of a sovereign (£0.001, or one mil) is equal to 0·24 pence, i.e. 4 per cent. less than our present farthing. This involves an alteration in the values of all our bronze coins.

(3) The Dominions Royal Commission Report of March, 1917, recommended the establishment "throughout the Empire of a uniform coinage based on the decimal system." Our retention of the £ sterling makes such uniformity impossible, since parts of the Empire, e.g. Canada and Newfoundland, have already discarded it in favour of the dollar.

The greatest of these difficulties is the necessity of altering the values of our bronze coins, as this involves some adjustment of many standard charges and prices. If we could discard all questions of national sentiment and view the choice from the point of view of cold logic, there is much to be said for the "Crown" or "Dollar," as its adoption would overcome all the above difficulties and bring nearer the time when not only the British Empire, but also the whole of the English-speaking world, would possess one uniform system of decimal coinage.

It must, however, be borne in mind that coinage, especially in its smaller denominations, must be graded to suit the values for which it is commonly used, and, therefore, the American cent (one halfpenny) and the nickel (five halfpence) do not afford enough range for the values and prices which are current in this country.

**THE SOVEREIGN AS UNIT.**—Moreover, in regard to the higher denominations, we cannot lightly abandon the international goodwill of the £ sterling, especially in these days of international borrowing, and for this reason its retention is recommended as the monetary unit. On this basis the full set of coins might be as given in the following table, from which it will be noted that proposals based on the "£" and the "Florin" respectively as our monetary unit differ from each other only in the position of the decimal point (e.g. £1.250 is the same as Florins 12·50).

TABLE OF COINS.			
	Coin	Value in Mils	Equivalent value in present currency
Gold or Notes	Sovereign	1,000	1'000
	Half-sovereign	500	0'500
	Double Florin	200	0'200
Silver	Florin	100	0'100
	Half Florin or Shilling	50	0'050
	Quarter Florin	25	0'025
Nickel	10 Mil Piece	10	0'010
	5 Mil Piece	5	0'005
Bronze	2½ Mil Piece	2½	0'0025
	4 Mil Piece	4	0'004
	2 Mil Piece	2	0'002
	Mil Piece	1	0'001

**ACCOUNTS.**—The first figure after the decimal point would thus represent the number of florins, and next two figures would indicate the number of mils. e.g. £1.250 would be the written expression of 1 pound 2 florins and 50 mils.

It may be observed that it would be practicable to retain the three-column system of book-keeping, no decimal points need then appear in our account books, as the existing cash columns—rechristened £ f. m. instead of £ s. d.—would conveniently separate the pounds from the florins and the florins from the mils. The following examples illustrate this feature and also demonstrate that it would be quite necessary to enter the figure 0 before the integer in the "mils" column (10+05 is the same as 10+5), that, even assuming it is desired to keep accounts in "halfpennies," 2½ mils could be entered in the mils column in the same way as we now enter 2½ d. in the pence column.

#### EXAMPLE.

£	f.	m.
1·250	=	1 2 50
1·025	=	1 0 25
0·105	=	,1 5
0·0025	=	2½
1·9975	=	1 9 97½
4·380	Totals	4 3 80

**Note.**—The "f" column would never contain more than one figure and the "m" column never more than our present "pence" column. If, as is usual, accounts were kept to the nearest penny, there would never be more than two figures in the "f" column, and the second of these would usually be 5 or a 0. Additions and subtractions would, of course, be carried out by simple instead of compound arithmetic, and the labour, together with risk of error, would thus be greatly reduced.

**THE NEW COINS.**—Under the proposed system adopting the £ divided into 1,000 mils no alteration whatever would be made in the values of those existing gold and silver coins which are retained, as its adoption would only affect coins of lower denominations than our present sixpenny-piece. The half-crown would be eliminated, but, pending its withdrawal from circulation, it could be readily expressed in terms of its decimal equivalent, viz. 125 mils. The silver threepenny-piece would be abandoned without regrets, as the comparative profusion of new coins to represent values lower than our present sixpence should be us

during the transition period as they provide a range of graduated steps which would facilitate the necessary readjustment of our present "pennyworts." In the course of time the above table of coins might be shortened and simplified by the withdrawal from circulation of any coins which experience had proved perilous. It will be seen that in all the subsidiary coins of silver, nickel, and bronze, provision has been made for halving and quartering the higher denominations, thus combating one of the principal objections hitherto raised against decimal coinage. Prices and charges now expressed in pence would be quoted in mils, and the present period of fluctuating values is most opportune time for making the adjustments incidental to this change of practice.

**HOW THE CHANGE MIGHT BE EFFECTED.**—As to the machinery for giving effect to this reform, our coinage should be rearranged on a decimal basis (retaining the sterling as our monetary unit) by leaving in circulation all our existing coins, down to and including the penny-piece, at their present values, but described, for purposes of account, by their equivalent value in mils.

Existing coins of smaller value than the sixpenny-piece might be dealt with in the following manner:—

- (1) Withdraw all threepenny-bits from circulation.
- (2) Issue to banks and post-offices adequate supplies of 5-mil,  $2\frac{1}{2}$ -mil, and 1-mil coins, and arrange for their delivery to the public in exchange for our present bronze coins at the rate of 50 mils for 12 pence or their equivalent in halfpennies and farthings, e.g.:—(a) 5 new 5-mil pieces for 6 pennies; (b) 5 new  $2\frac{1}{2}$ -mil pieces for 2½ halfpennies; (c) 25 new mil pieces for 24 farthings. 1 pennies, halfpennies, and farthings not so exchanged to pass as 4, 2, and 1 mils respectively.
- (3) Issue new 4-mil and 2-mil bronze coins as required, or, to save minting new coins, re-issue the old pennies and halfpennies as tokens for 4 mils and 2 mils respectively.
- (4) Issue new 10-mil nickel coins at convenience.
- (5) In all new issues of coinage, stamp thereon in figures their respective values in mils, e.g. 1 Florin = 10 Mils.

By exchanging old coins for new ones in the above manner the change could be made without loss to the individual or to the State.

these replies it is concluded that the factors essential to engineering success are, by substantial agreement among the witnesses, in order of merit, character (including initiative), judgment (including perspective), efficiency, understanding of men, knowledge of engineering science, and technique of engineering practice. Based upon this consensus of opinion, an inquiry has been made into the work of the schools, where 60 per cent. of the students are "weeded out" of the engineering course, and usually half the successful candidates "scraped through" in one or more subjects. From this investigation it appears obvious that the high percentages of failure and the large proportion of bare successes are due to the fact that the school work is not too hard, but that it is presented in so abstract a manner as to have little or no meaning to students.

The results of Prof. Mann's study are of fundamental importance far beyond the limited scope of the engineering schools, and will influence the educational system below classes of undergraduate rank. They tend to support a general idea which ran through many of the January conferences, that individual initiative, resourcefulness, responsibility, integrity—in a word, character—are the prime result at which education should aim. The engineers rate this factor as contributing 24 per cent. towards success, whereby is implied that a perfect character is 24 per cent. of the equipment of the perfect engineer; in their opinion, this factor alone is of equal value with knowledge of engineering science, combined with technical skill in engineering arts. The pupil's reaction as a human being to the teacher's activities is more important than the acquisition of either knowledge or the ability to do. Moreover, the schools fail by their aridity; the work set is devoid of human content and human relationship; the immature mind is called upon to follow intelligently the abstractions which appeal to the trained intellect rather than to understand, by the solution of everyday human difficulties, how these abstractions are related to ordinary human experience. Whatever his subject, he is probably an over-bold teacher who asserts that his teaching is free from this sterilising defect, that he does not by his matured intellect inhibit the growth of the mental powers of his pupils.

## ENGINEERING EDUCATION IN AMERICA.

A NOTEWORTHY "Study of Engineering Education" was contributed by Prof. C. R. Mann, of the University of Chicago, to the *Educational Review* for January last. As the result of an historical survey it is determined that there are three problems of the immediate future: to introduce the practical arts into the schools in such a way that all may share their educational value; to devise human machinery that shall assure to every American justice and a fair field; and to develop the highest efficiency of production, an efficiency entirely dependent upon freedom for individual initiative. Nearly seven thousand inquiries were addressed to members of engineering societies, and their replies were tabulated. From

## ITEMS OF INTEREST. GENERAL.

As we go to press no announcement has been made of the date of the second reading of the Education Bill. But on November 23rd, speaking at Brighton, Mr. Fisher declared that the Government intends to pass the Bill. According to the *Times*, the Government will give facilities for the passage of the Bill provided that a guarantee is given that the debates in the House of Commons are limited to a specific number of Parliamentary days. We are still hopeful as to the prospects of the Bill. The vital importance of educational reform, if this country is to hold her own among the great nations, is everywhere recognised, and avoidable delay will bring discredit upon our statesmen.

THE annual meeting of the Association of Public-School Science Masters will be held on January 8th and 9th, 1918, at the City of London School. Sir Ronald Ross will preside and give an address on "Observations on the Results of our Present System of Education." Among the subjects to be discussed during the meeting are:—Examination or inspection as a test of science teaching, introduced by Mr. G. F. Daniell; compulsory science in university entrance examinations, Mr. O. H. Latter; subsidiary subjects in university scholarship examinations, Mr. H. de Havilland; descriptive astronomy in the "science for all" course, the Rev. A. L. Cortie; and map-reading as a school subject, Mr. V. S. Bryant.

At a conference lately held in Cambridge between the principals and lecturers of Girton and Newnham Colleges and representatives of the Incorporated Association of Headmistresses, a resolution was carried urging upon the Board of Education the extreme importance of recognising English as one of the principal languages in an advanced course of modern studies in secondary schools.

THE adoption by the House of Commons of the amendment, moved by Sir Philip Magnus, to the Representation of the People Bill, giving separate representation with one seat to the University of London and two seats to the group composed of Durham, Manchester, Wales, Liverpool, Leeds, Sheffield, Birmingham, and Bristol, will give general satisfaction. The universities of Great Britain will be represented in Parliament as follows:—

Description of University constituency	No. of members
England and Wales—	
The University of Oxford ... ... ...	2
The University of Cambridge ... ...	2
The University of London ... ...	1
The University of Durham, the Victoria University of Manchester, the University of Wales, the University of Liverpool, the University of Leeds, the University of Sheffield, the University of Birmingham, and the University of Bristol ...	2
Scotland—	
The University of Edinburgh, the University of St. Andrews, the University of Glasgow, and the University of Aberdeen	3

THE formal opening of the Nautical College at Pangbourne took place on November 16th, and Vice-Admiral Sir Herbert L. Heath performed the ceremony. The college is to receive Royal Naval Reserve cadets, who are to be educated and trained in modern conditions to qualify them for a seafaring career. The need for the special training of boys of a suitable type has long been felt. In founding this Nautical College, Messrs. Devitt and Moore, the well-known shipowners, have launched a scheme which promises excellent results. A number of boys who pass through the institution will take advantage of arrangements to be made by the Admiralty for the offer of cadetships in the Royal Navy on the same basis as those to be gained in the Conway, but the majority will in due course take their places in the merchant service. The boys are admitted between the ages of thirteen and a half and fifteen years, and on entry are enrolled as Cadets R.N.R. The captain-superintendent is

Capt. W. H. F. Montanaro, who retired from the Royal Navy, as commander, in 1907, after thirty years' service, and has since acted as captain-superintendent of the Marine Society's training ship *Warspite*, and governor of the Royal Merchant Seamen's Orphanage at Snaresbrook. In addition to being taught navigation and other subjects, the cadets are instructed by seamanship instructors, and also drilled and taught boat-handling in service cutters on the Thames. The educational course occupies two years, and for the third year of their training the cadets are to be drafted into foreign-going vessels. This will be followed by a further period of twelve months' training with the Fleet among officers of the Royal Navy. The cost to the parent for board and education during the first three years is £210.

THE headmaster of the Southall County Secondary School, Mr. S. Pollitt, recently appealed to the local manufacturers for financial aid in establishing leaving scholarships from the school to the science colleges affiliated with the London University. In answer to this appeal, the Maypole Dairy Co., Ltd., whose extensive works in Southall are well known, has granted a sum of £1,000, which is to be handed over to the governors and headmaster to be invested for the establishment of a leaving scholarship tenable at the Royal College of Science, London University, South Kensington, and to be known as the "Maypole Science Scholarship." The public-spirited action of the Maypole Dairy Co. has opened up great possibilities of useful co-operation between local employers and educational institutions which will tend to encourage the efforts necessary for the future commercial prosperity of this country.

AN interesting conference of engineers and educationists on the organisation of engineering training was held at the Institution of Civil Engineers on October 25th. The chairman, Sir Maurice Fitzmaurice, said there was general recognition that boys taking up engineering should receive uniformly sound training and that there should be a full supply of young engineers to meet the industrial needs of the country. Mr. A. E. Berriman, who organised the conference, explained the objects of the movement and of the proposed central organisation. It is proposed first to concentrate attention on the co-ordination of engineering training, including the fostering of apprenticeship as a national institution, and the consideration of means by which the works period of an engineering pupilage may be increased in efficiency, and a wider appreciation secured for the value in industry of education of university rank. Secondly, the maintenance of a Central Bureau is contemplated, where parents and educationists can obtain accurate and comprehensive information relating to the engineering industry, and the proper course to pursue on behalf of boys who are desirous of making engineering their profession. Thirdly, it is proposed to promote scholarships, or other equivalent means by which the best talent may be enabled to rise to its proper level under the stimulus of educational opportunity. Resolutions were adopted approving the proposals, and a representative committee was appointed to carry them into effect. For

present communications referring to the scheme is to be sent to Mr. A. E. Berriman (chief engineer, Amherst Co., Coventry) or Mr. A. P. M. Fleming, British Westinghouse Co., Trafford Park, Manchester.

ELEVEN Teachers' Commandments appear in the *Teachers' Aid* for October 27th. We append some of them. "Thou shalt have other interests besides thy schoolroom. Thou shalt not kill one breath of stirring endeavour in the heart of a little child. Thou shalt not covet thy neighbour's school, nor her children, nor her manner, nor her system, nor anything that is thy neighbour's; work out thine own salvation with fear and trembling, only don't let anyone know about the fear and the trembling. Thou shalt laugh: when it ins and woolly-smelling wee ones muddy the floor; when it blows and doors bang; when little angels conceal their wings and wiggle; when Tommy spills ink and Mary flops a trailing tray of letters; when visitors peer when all small heads have forgotten everything they thought they knew. And again I say unto you, nigh, for upon all these commandments hang the law and the profits in thy schoolroom."

We wish that the lecture delivered last year by Prof. Rothenstein at the Sheffield Technical School of Art, and now published by Messrs. Constable at a trifling cost, could be read and understood by every person in this country who has a share in the control and management of an art school or department. For there is an unfortunate disposition on the part of the local authorities to regard education in art, unless, indeed, it can be turned to immediate commercial advantage, as a mere luxury, which appeals only to a select few, and can be dispensed with in a time of national stress. And even those who are too far-gifted to neglect art are apt to take the mistaken view that the cultivation and encouragement of art consist chiefly, if not entirely, in the imitation of the art of other civilisations and of bygone times. Prof. Rothenstein enters a strong "plea for wider use of our artists and craftsmen" in the service, not merely of private patrons, but also of national, religious, and civic institutions. "While our engineers construct a Forth Bridge or an Assouan Dam, we are content to get from our architects make-believe Gothic or Renaissance, and from our painters and draughtsmen amusing pastiches of Persian drawings, Japanese prints, Byzantine mosaics. Interesting enough such essays are; but is it not a pity that so many people should be satisfied with this masquerading spirit?" If Prof. Rothenstein's views could be carried into practice, a new day would dawn for artists, and in its turn for the education of artists.

STUDENTS of physics will find the October number of *Science Progress* of special interest. Sir Oliver Joliffe writes as a "conservative physicist" on "Motion through Ether," and criticises certain popular expositions of the theory of relativity, which has caused so much perturbation in modern physical philosophy. He concludes that Newtonian dynamics is supplemented by modern discoveries, but by no means superseded, and that the existence of the ether of space is not discredited, but rather upheld. Dr. A. R. Houstoun

has a very interesting article on Newton's reasons for including indigo among the colours of the solar spectrum, in which comparatively few people are able to detect it. Mr. S. C. Bradford's article on dispersoidology is not so forbidding as the title (which means the study of the manifestations of surface energy) would suggest. Whether a given substance assumes the colloidal or the crystalloid form depends, it appears, upon the extent of its specific surface. Popular science is represented by Father A. L. Cortie's illustrated article on the nature of sun-spots. The editor writes a vigorous and convincing indictment of the world's misrulers and their misdeeds. The remedy he hopes to discuss in future articles. The quarterly notes of recent advances in science and the reviews of new books are of the usual high order of value to scientific workers. The number is altogether excellent.

In the September issue of the *Educational Review* of New York Prof. Nicholas Murray Butler records his conclusion that higher education in the United States is improving wherever such educational material as gives training in mind concentration as well as genuine knowledge is put in the place of the former classical studies. He claims that the two or three best American schools of law have no equals in Europe; the best schools of medicine have no superiors in Europe, although certain European cities present better opportunities for clinical observation and study; the three or four best schools of engineering, if not so good as the best in France, Germany, and Italy, certainly press them very hard. The best American school of education is in a class quite by itself, and at half a dozen universities schools of similar type are rapidly coming forward to take places in the front rank; the scholarly investigation being undertaken in America equals in amount and in quality that which is going forward in any other country.

EXCLUDING the Bombay schools, the majority of the Indian high schools annually suffer a severe curtailment of the teaching period in consequence of plague. The visitation is so regular that the pupils speculate as to the date of compulsory closing some time before the stray rat—sure harbinger of pestilence—is discovered. Such speculation interferes with scholastic progress, and finally the school is closed for possibly three months. Efforts are made to overcome the difficulty; in some schools the plague period is substituted for the summer vacation, and an attempt is made to continue school work throughout the month of May, when climatic conditions are adverse to all mental effort. A better plan is gradually coming into use; the school building is closed, but the school itself is removed to a comfortable shady mango grove, where teachers and taught both gain from the necessity for initiative and self-reliance due to the paucity of apparatus and the lack of school facilities.

THE South Australian Teachers' Union completed twenty-one years of useful work in July. The president, in his address at the annual meetings held in the Adelaide High School, commented upon the fact that the Director of Education for South Australia, the Superintendent of Primary Education, and seven members of the staff of inspectors had all been presidents of the S.A.T.U. The teachers of South Australia

have voluntarily submitted to a percentage reduction of their salaries, and organised and directed the efforts of the children to send gifts to the soldiers; they have, especially the women, worked harder and for longer hours, and many men have joined the Army. The Director of Education suggested the universal adoption in the schools of the prefect system and commended the methods adopted in Warwickshire in 1911. The Premier, who is also the Minister of Education, announced the establishment of junior technical schools with either a mining or an agricultural bias. The minimum salary for men of twenty-one has been raised from £120 to £140 annually.

In an article on "Post-war Educational Reform" in the *Madras Educational Review* for July, Mr. S. Krishnamachariar, of the Hindu High School, Triplicane, points out how the development of the educational system of Japan yields a suggestive line of development for India. In Japan, formerly, the educated man aimed at service in the bureaux of the Government, and there were large numbers of disappointed young men who had failed to secure such an appointment; similar conditions prevail now in India. The situation was met in Japan by the establishment of definite courses of instruction which gave complete training for various occupations. Pupils who were unable to enter the university passed from the secondary school to an institute, where they had a special two or three years' course of study in one of four branches: commerce, agriculture, marine industries, or land industries. In each branch the courses were twofold, aiming at the production of men of lower or higher skill and knowledge in their respective branches. India should benefit by the experiences of Japan.

#### SCOTTISH.

MR. PAGE, the United States Ambassador, addressing the Edinburgh Philosophical Society on October 15th, took as his theme "American Educational Ideals." At the outset he expressed the indebtedness of the United States to Scotland, which in recent years had led to a great constructive movement in American life. Both countries had as the basis of their educational system the conviction that every child had the right to have his intellectual life quickened, and that the building up of character was an integral part of education. In sketching the main features of American education, Mr. Page laid emphasis on the gradual development that had taken place in every type of education. Public school, high school, training college, and university had all in recent years broadened their basis and enlarged their sympathies. The university in particular carried its activities to every part of the commonwealth, so that the people had come to believe that the university was not merely a place where a limited number of students might go to receive the benefits of higher education, but also the organising centre for the intellectual, industrial, and commercial activities of the whole State. It was this system which had built up for them in the United States the three pillars of a free country—general intelligence, civic judgment, and a generally diffused prosperity.

MR. STRONG, president of the Educational Institute of Scotland, has struck a fresh and welcome note in his addresses to teachers in various parts of the country. Turning aside, for the moment at least, from the perennial subject of salaries, he has emphasised the need for the development of a professional conscience and a professional code of etiquette. Teachers as a profession were to earn the respect and esteem of the community, their primary aim, he contended, must be not mere selfish aggrandisement, the advancement of education. For this they must have complete freedom for the teacher. He must be supreme within his own domain—the classroom—a must not be called upon to merge his personality that of any other, however eminent.

GLASGOW UNIVERSITY has followed the lead of Aberdeen and St. Andrews in protesting against the proposed lowering of the age and the alteration of the examination syllabus for the Indian Civil Service. The arguments against the lowering of the age of entrance are not very convincing, but there are valid educational objections against the syllabus of examinations. This is framed on the same principles governed the old syllabus, namely, specialisation in a limited number of subjects. But what is right and fitting for pupils from twenty-two to twenty-four years of age is not necessarily best for youths between seventeen and a half and nineteen and a half years of age. At the latter age pupils should be expected to have completed only a sound course of liberal study, embracing at least four or five separate subjects. The period for specialisation should come after. Preparation for the proposed examinations for the Indian Civil Service can be undertaken in Scottish schools only by throwing overboard the curricula approved by the Scotch Education Department. It is difficult to understand the position of the Commissioners. They presumably wish for their service youths of ability, initiative, and resource. Surely these qualities can be tested better by an examination in the traditional subjects of school education than by a highly specialised examination in a limited group? They wish to test capacity and not knowledge. Yet their proposed examination puts premium on mere knowledge.

DELEGATES from the Parliamentary Committee of the Scottish Trade Union Congress waited recently upon the Secretary for Scotland at Dover House, London, to place before him the resolutions of Congress in regard to educational reconstruction. These included the extension of free education to the secondary and university stage, the provision of nursery schools for children, the gradual raising of the school age to sixteen, with compulsory maintenance grants according to age, and the provision of part-time day continuation classes for all young people between sixteen and eighteen years of age. The Secretary for Scotland, in reply, said that the points placed before him had already been considered, and the conclusions arrived at would be embodied in the forthcoming Bill. He was much gratified to find the deputation, on behalf of the great body of public opinion that it represented, so thoroughly sound on the vital question of the education of the young.

reply to a question put to him in the House of Commons, the Secretary for Scotland said that the Education Bill was substantially completed in draft, whether it would be possible to introduce it this session was a question for the Leader of the House. A reply shows a marked weakening on the position taken up earlier in the session, when it was confidently hoped that the Bill would be introduced on an early date. Teachers' organisations in the North must put themselves and bring pressure to bear on Scottish members to secure at least one half-hour this session for Scottish business. If there is any real belief behind all the public talk of the need for educational reconstruction, there should be little difficulty obtaining the requisite time for the introduction of this measure.

SIR DONALD MACALISTER, in introducing to the students Mr. Brennan, the new lecturer on Russian in Glasgow University, emphasised the necessity for our better comprehension of the Russian nation, and expressed the hope that the great commercial city of the West of Scotland would send many of her sons as missionaries of our ideas and institutions to that great country. Mr. Brennan, in his opening address, dealt especially with the position of English in Russian schools. All the teachers in the secondary schools of Russia were university graduates, and the teachers of English were no exception to the rule. The English staff for the most part consisted of English-born teachers, but they were not appointed to the schools unless they had a thorough knowledge of Russian, both spoken and written. A university class in Russian had thus great possibilities, both educational and commercial, for all students attending it.

THE delay in the issue of the Departmental Committee's report on salaries gave rise to much adverse criticism among managers and teachers in Scotland. Both parties were looking to it to give them a lead in the distribution of the new grants. The scheme of allocation must be in the hands of the department before December 1st, and boards have reluctantly to prepare these schemes without any guidance from the committee. It is satisfactory to find many school authorities adding materially from their own funds to the Government grants, but even then the increases to teachers go but a little way towards placing the profession on a satisfactory footing. If young people of the right type are to be attracted into it in future, school authorities must tackle the salary question in a root-and-branch manner, and deal with the question, not from the point of view of existing conditions in the teaching profession, but from that of the practice in competing professions and occupations.

THE written examinations for the leaving certificate will begin on Tuesday, March 19th, 1918, and be continued, according to the time-table shown in Circular 449, until Wednesday, March 27th. It is hoped that this year more consideration will be shown in the questions set for the difficult conditions under which work is being carried on in the great majority of the schools. It is much better from the educational point

of view to lower the standard of the paper and to keep the standard of marking fairly high than to retain the old standard and lower the percentage of pass. This session there is evident in most schools a serious falling away in the attainments of the pupils, and teachers expect that fact to be kept in view in the preparation of the examination questions.

#### IRISH.

No statement has up to the present been made in the House of Commons concerning the new grant for Irish secondary education beyond a brief remark by Mr. Duke that the matter was being considered and details worked out, but it is possible that a fuller announcement will have been made before these notes appear in print. In October, however, which is a month of considerable educational activity in Ireland, deputations waited upon Mr. Duke from the Catholic Headmasters' Association, the Headmasters' (Protestant) Association, and the Association of Secondary Teachers (the Assistant-teachers' Association) to urge from different aspects their views about the amount and distribution of any new grant that may be made. All these interviews were private, and no public statement has been issued about them.

THE Catholic Headmasters' Association, at its annual meeting, passed the following resolutions dealing with intermediate education:—(1) That inspectors should not have power to increase or diminish the school grant, much less to take it away altogether; (2) that the association should be represented on the Intermediate Board; and (3) that in mathematics 25 per cent. on all the mathematical subjects combined should be sufficient for a pass, or, as an alternative, 30 per cent. in arithmetic and algebra combined, geometry being optional.

THE (Protestant) Headmasters' Association, dealing with intermediate education, passed the following resolutions:—(1) That instruction and training in the duties of citizenship are essential parts of education, and should receive adequate attention in every school; (2) that the Intermediate Board be requested to publish a general summary of the inspectors' reports on the schools and on the teaching of the different intermediate subjects; (3) that the standard of honours questions in mathematics in the senior grade during the past two years has been too high; (4) that in mathematics it be suggested that a pass in arithmetic be compulsory, and also in algebra and geometry combined; (5) that in the arithmetic paper six straightforward questions should be set for pass candidates, together with four more additional questions for honours candidates, two hours being allowed for the paper; (6) that attention be directed to the unsatisfactory nature of the prescribed books in English and Latin in the junior and middle grades; and (7) that the Board be requested to set separate papers in prose composition, in Greek and Latin respectively.

THE educational conference called in June by the Central Association of Irish Schoolmistresses to discuss educational reform resumed its sittings in October, but confined itself to the question of considering the best method of allocating the proposed new grant for

secondary education. The conference contained representatives from the Irish Secondary Teachers' Association (men's and women's branches) and the Association of Irish Women Graduates, in addition to the Central Association itself. The Headmasters' Associations, having already taken separate action before the conference met, felt themselves precluded from joining its meetings. The conference has issued a report which deals severely with the allocation of the teachers' salaries grant, often called the Birrell grant, and points out that in many instances schools which receive the grant have not used it according to the original intention, to improve the salaries of the assistant-teachers. It is suggested that the grant should not be paid until the authorities receive guarantees that it will be properly spent. In reference to the expected new grant, five suggestions are put forward:—That it should be used (1) to make an immediate increase in registered lay teachers' salaries; (2) to provide increments; (3) to initiate a pension scheme; (4) to make it possible for teachers to take courses in professional training; and (5) to help financially small schools doing good work.

THE Department of Agriculture and Technical Instruction has issued regulations for a new higher certificate in geography, which it is proposed to issue to qualified students. It is believed that the certificate will meet the needs of those who wish to teach geography in secondary schools. Some preliminary knowledge of science will be required, and a course in geography must be taken in the Royal College of Science lasting one or two years. The course will include (i) physical geography and geology; (ii) economic geography; (iii) surveying; and (iv) regional geography.

THE president of University College, Cork, states in his report that the number of students attending the college rose from 422 during the session 1915–16 to 486 during the session 1916–17. Of these 464 were matriculated, three were non-matriculated, and nineteen were post-graduate. The new students number 164. The total is sixty higher than in any previous year, and eighty higher than in any year before the passing of the Universities Act of 1908.

THE need for more financial help towards technical education is becoming more and more pressing, and a large and important public meeting has been held in Cork to urge its claims at the instance of the Cork Borough Technical Instruction Committee. In the resolution passed the following were indicated as the directions in which increased expenditure is more urgently called for:—The erection of school buildings and the payment of the annual instalments due on those already erected, the extension of day teaching of all kinds, the foundation of apprentice scholarships, the increase of facilities for the training of women teachers by the extension of the Training School of Domestic Economy, an industrial information bureau, higher ratio of remuneration for teachers, the establishment of a pension scheme for whole-time teachers and officers, and the provision of war bonuses.

SEVERAL purchases of Greek pottery from the Hope heirlooms are now on exhibition in the Dublin Museum

of Art. These have been bought largely by the contributions of private individuals for the National Museum, and for University College, Dublin, and those belonging to the latter are being exhibited, together with others in the museum, until the new buildings of University College are completed. Although the number of pieces is small—twenty-three altogether—they are representative of all periods of Greek art, and help to supply a long-felt want in Ireland of good specimens, and Dublin is therefore much indebted to its generous donors.

#### WELSH.

THE suggestion has been made that the teachers of the country should unite to protest alike against the postponement of the Education Bill and the use that is being made of the Fisher grants. There seems to be a great opportunity for doing something of the kind. It would not be difficult to devise a method of bringing home to every parent in the country the urgency of these matters.

THE most telling criticisms made concerning Mr. Fisher's recent speeches in Wales dealt with the fact that while he laid before the local authorities the end to be sought he gave no indications of the lines to be followed or the stages by which progress could be made along them. Education committees were to devise schemes for nursery and continuation schools to suit the needs of their own districts, and submit them to the Board of Education; but there was no recognition of the fact that such schools cannot be provided, staffed, and organised by the stroke of a pen or the vote of an education authority. At the present moment the extension and development of educational work planned even before the war are arrested by the want of buildings and teachers. This school year has seen large increases in the number of pupils seeking admittance to Welsh schools. The South Wales Labour Federation, in considering the resolutions of the Llandrindod conference, based its demand for a National Council directly elected by the people, and its censure of the proposals made by the conference, partly on the fact that the latter had refused to advocate the abolition of all secondary-school and university fees. This censure was based on ignorance of what really happened at the conference; the meeting declined to discuss the matter simply because it was recognised that without great expansion of both buildings and staff the proposed abolition and its consequence in the vastly increased influx of pupils could not possibly be dealt with.

THE same considerations apply to the proposals of the new Bill. Over how many years should the realisation of its aims be spread, and by what stages should they be approached? The postponement of the Bill is defended on one good and one bad ground—the congestion of public business and the fact that opposition may be raised to some of its provisions. The first difficulty may be met by spending as little of the time of Parliament on it as possible; the second by passing what forms far the larger part of the scheme, the part on which all are agreed, and leaving the working out of it to people outside Parliament. The opposition to the abolition of half-time can be overcome, even if the enlightenment of the employers con-

would not lead them to withdraw it; and in a  
ter which must inevitably take long to develop the  
er the country gets to work on it the better.

HE administration of the supplementary grants  
ies in different places; in some the authorities have  
ognised their duty and done it, in others they have  
the half of it, while in some places they have done  
little as they could for the teachers and used as  
much of the money as they dared for the indirect relief  
local funds and for the furtherance of schemes of  
ure development. One authority could not do better  
an give its staff a war bonus of £5, and a salary  
crease of £10, to meet the doubled prices of the  
cessaries of life, but could invest a large sum in  
ar Loan. Others merely raise the maxima of the  
aries and give a trifling present relief; others, again,  
e the money to engage new teachers—whose appoint-  
at should be justified by increase in the number of  
pils. The present rush to establish some sort of  
ales, often consisting of promises for the future, is  
many cases simply a measure to save the face of the  
uthorities, and to make it appear that they would have  
nted them before if they had had the money; it will  
well for them to recognise that they are on their  
al in respect of their goodwill towards the teachers,  
d that the future conditions of grants will depend  
their present doings.

EIGHT schools in Wales have been recognised as  
able of maintaining advanced courses; it is to be  
ped that they will not follow the example of certain  
nglish schools by advertising for new teachers at high  
laries instead of putting the work and the rewards  
to the hands of those of their staffs who have already  
r years been giving efficient preparation for the  
gher and honours courses of the Central Welsh  
ard.

MR. A. H. COOPER, of Wrexham, is to give evidence  
ore the Departmental Committee on scales of  
laries for teachers in secondary schools on  
half of the Welsh branches of the I.A.A.M.  
mong the demands put forward by the association are  
e abolition of capitation fees, an adequate national  
lary scale, applying to all teachers in all schools,  
nd that the salary of the head shall not exceed that  
f the senior assistant by more than 50 per cent., while  
eads of departments and specialist teachers shall be  
n receipt of salaries above the minimum of the scale.

At the annual meeting of the Court of Governors of  
Cardiff University College on October 18th votes of  
anks were accorded to Sir W. Tatem, of Cardiff, for  
is gift of £25,000 to found a chemical laboratory to  
be called by his name; gifts of £2,100 from Messrs.  
Morgan, Wakley and Co., and of 1,000 guineas each  
from Messrs. Dan. Radcliffe, Herbert Cory, M.P., and  
J. W. Benyon, for the equipment of science labora-  
tories, were also acknowledged.

LIEUT. D. J. DAVIES, head teacher of Ynyswen Boys'  
School, Treorchy, has won a case in the Appeal Court  
securing the fulfilment of the conditions of the allow-  
ance made to him by the Rhondda Urban District  
Council when he joined the Army. Other cases are  
known in which a man who has joined the Army has

had his post filled by a teacher appointed on a per-  
manent basis, instead of having it kept open for him;  
and it is likely that such cases will not be allowed to  
pass unnoticed. There is little excuse for making  
such appointments; there will be room after the war  
both for the teachers who come back and for those  
now holding their places.

## RECENT BOOKS ON EDUCATION.

(1) *The Principles of Rational Education.* By C. A. Mercier. 87 pp. (Mental Culture Enterprise.) 2s. 9d. net.

(2) *Educational Measurements.* By D. Starch. 202 pp. (New York: The Macmillan Co.) 5s. 6d. net.

(3) *Supervised Study.* By A. L. Hall-Quest. 433 pp. (New York: The Macmillan Co.) 5s. 6d. net.

(4) *Hints that Win Success.* 250 pp. (Evans Bros.) 3s. 6d. net.

(5) *State Policy in Irish Education, A.D. 1536 to 1816.* By the Rev. T. Corcoran. 234 pp. (Longmans.) 6s. net.

(6) *How to Read.* By J. B. Kerfoot. 293 pp. (Constable.) 5s. net.

(7) *Youth, School, and Vocation.* By M. Bloomfield. 273 pp. (Harrap.) 3s. 6d. net.

(8) *The Upbringing of Daughters.* By Catherine D. Whetham. 250 pp. (Longmans.) 5s. net.

(9) *Be a Man! A Word in Season to Junior Boys.* By H. Bucknall. With a Preface by Sir J. McClure. 152 pp. (Harrap.) 2s. 6d. net.

(1) In his volume on "The Principles of Rational Education," Dr. Mercier makes a ferocious attack on the traditional classical curriculum, but with the qualification that badly taught science would be as bad as anything else. With his general thesis, and with his strictures on the examination of candidates for the Civil Service, most educational reformers will, we believe, sympathise. But we cannot believe that he advances his cause by his violent methods of controversy, or by his extreme views as to the content of the curriculum. He bundles together literature, mathematics, chess, and music as recreations (with a slight drawback in the case of mathematics) to which he would give only "some odd corners of the time devoted to education." This kind of thing was said very well by Spencer so long ago as 1861, and scarcely needed repetition. Here are a few gems from Dr. Mercier's pages:—"Browning and Meredith have attained fame by exploiting the ignorance and bad taste of the public to which they appealed"; "No one can read Plato without understanding quite well why the Athenians poisoned Socrates, and this is about the only thing the reader will understand clearly; and it will be strange if his comprehension is not accompanied by some regret that they did not poison Plato as well"; "We can teach our scholars the mystical speculations of muddle-headed men who have written unintelligible nebulosity which the teachers of it themselves do not profess to understand, and which is called . . . philosophy." And yet Dr. Mercier complains of the "confused and usually angry writings of the advocates of the classical education." He makes statements, certainly requiring proof, about the "faculties" for chess, music, and mathematics, and calls those statements "truisms so manifest, so patent, so unanswerably true," that he who asks for proof must practically be a lunatic. And yet he never tires of reiterating: "Whoso makes an assertion, on him lies the burden of proof." By the way, where did Dr. Mercier pick up the notion that the Franco-Prussian war was the occasion that induced this country to adopt compulsory education? The most

elementary acquaintance with the facts would have shown him that there was no connection between the two events. Some of Dr. Mercier's constructive suggestions are very good, though by no means so new as he manifestly thinks them. At some points, however, in our perusal of the book, we should have been tempted to think it an elaborate joke, were there not clear evidence to the contrary.

(2) Millions of school marks are assigned every year, and millions of qualitative judgments—e.g. good and bad, greater and less, better and worse—are passed upon the personal qualities and the classroom performances of our pupils. To the scientifically disposed mind, the question presents itself whether the day can ever come when all this work will be done, not only with order and system, but even with scientific exactitude. One might hazard the *a priori* opinion that a strict scale of measurement of ability should not be very difficult to secure in such matters as reading, writing, spelling, and the mechanical processes of arithmetic. Numerous American investigators, and a few British, are at any rate working at this problem of "educational measurements," not only as regards these subjects, but also with regard to composition, drawing, languages, and science. Dr. Starch, in his new volume, reports progress, so to speak, on the whole question. He states the case, and summarises the results so far obtained. To all who have the opportunity and the inclination to pursue such investigations, or to make use of the results available, the book will have a real, though a necessarily provisional, value.

(3) The main thesis of Mr. Hall-Quest's volume on "Supervised Study" is that good teaching consists, not in giving lessons and in hearing lessons, not in telling and testing, but in training the pupil to get knowledge, to think, and to study for himself. The principle of supervised study is thus held to involve a new type of class management, in which the teacher regards himself as a director of study, working with the pupil, but not for him. It also involves, in most cases, less home-work, and a rather longer school day, an hour or so of which is devoted to training in methodical and economical study. The principle itself is, of course, not new; but its thoroughgoing application in practice, which is what the author of this book is concerned about, would certainly be a novelty, and is a consummation devoutly to be wished. We think that Mr. Hall-Quest over-elaborates his theme, almost to the point of writing a book about education in general, and that the book would have gained in force and point if its contents had been reduced to the extent of one-half or two-thirds by the omission of matter that can be found in a hundred other books. Nevertheless, the central problem of the book makes it important.

(4) "The Teacher's Book of Hints that Win Success" is "not intended to be a text-book of method, or an encyclopædia of facts," but is described as "a collection of 'wrinkles' derived from the practical experience of a large number of skilled teachers, and carefully chosen for their originality and general usefulness." The sections of the book include arithmetic, art, English, geography, history, needlework, reading, science, spelling, and writing, followed by a long section of miscellaneous "wrinkles." The aim is strictly practical, and there is no pretence of exhibiting principles. Though we certainly should not recommend the adoption of some of the suggestions made, we think most of them good, and some of them excellent. Teachers in elementary schools and in the lower forms of secondary schools, however experienced they may be, will find useful hints, and we can well imagine that an inexperienced young teacher may find the book a godsend.

(5) Dr. Corcoran's work on "State Policy in Education" will naturally make its primary appeal to Irish educators, though the points of contact with education in Great Britain are so numerous that it will make a wider appeal as well. But for us the main interest of the book lies in its method and point of view. As the sub-title indicates, the history is "exemplified in documents collected for lectures post-graduate classes." In our opinion, Dr. Corcoran has shown lecturers on the history of education in training colleges the only successful way of dealing with their subject. With such students as he has in view, it is certainly desirable, as he says, that so important historical issue in education should be worked at in its documentary sources, and we think it is right in deciding that such an issue may best be sought in the history of educational practice within their own country. We commend the book to the attention of all who are interested in its subject, and we strongly advise lecturers on the history of education, whatever may be the country or period they are dealing with, to take note of Dr. Corcoran's method.

(6) Fresh, racy, stimulating, and suggestive—they are the epithets that irresistibly come to one's mind on laying down Mr. J. B. Kerfoot's book entitled "How to Read." His thesis, though not strikingly original, needs rubbing in, and in his method of bringing it in he certainly is original. He writes chiefly to combat the notion that it is the amount that we remember and especially the sum of what we remember out of what we read, that matters. What really counts is the sum of what happens in us through reading—the outcome of those combinings and transformations "in which new tissues are added to our intelligence and new cells to our understanding. What counts is not the quality of intellectual food, but the products of our intellectual digestion." So far from being a mere receptive act, reading is "a creative process," it is a species of anabolism," it is "a form of living," and only by so regarding it can we derive culture from books. Mr. Kerfoot never mentions the word psychology, but all the way through he shows himself a good psychologist. For the teacher, for the advanced pupil, and, indeed, for the intelligent general reader, the book furnishes abundant food for profitable thought.

(7) The problems of juvenile employment, which are exercising the minds of social and educational workers in this country, and appear to be equally urgent as in grave in other civilised countries, depend for their solution, not only upon humanity and sympathy, but also upon scientific methods of attack. For that reason we welcome Mr. Bloomfield's new work. On a former occasion we noted with approval his "Readings in Vocational Guidance," in which he brought together a great deal of useful material bearing on the subject. The present volume, entitled "Youth, School, and Vocation," surveys systematically what is known in America as "vocational guidance," its difficulties, its social significance, and its efficient organisation. Two chapters are devoted to vocational guidance in Germany and in England respectively. In the latter part of the book a quantity of "suggestive material" is brought together, consisting of schedules, questionnaires, records, etc. The author's special experience as director of the vocation bureau of Boston furnishes a guarantee that what he says is of practical value.

(8) Each generation brings forth its own crop of literature relating to the training of children in the home. Miss Martineau wrote for the middle, and Miss Mason for the end, of last century. But, as Mrs. C. D. Whetham says, at all times, and especially in times of stress and strain, old truths and common-place experiences are apt to be overlooked, and it is

before not impertinent to restate them according to light and language of our own generation. We ask Mrs. Whetham does herself less than justice in modestly describing her aim and her achievement, as she has done something more than rehabilitate old fictions about "The Upbringing of Daughters." Speaking from long experience in helping to bring up daughters, the writer of these notes is quite clear that the book is well worth the attention of all persons of middle classes who are faced by a similar task. Such matters as household duties, health, dress, education, reading, professions, conduct, and religion are all treated with distinction of style and with breadth and sanity of outlook.

There can be no manner of doubt that Mr. H. G. Farnell, the author of "Be a Man!" knows the boy through and through. As the distinguished writer of the preface truly says, "it is rarely indeed that one comes across a series of such good, strong, straightforward talks to boys." Breeziness is the prevailing note of the book, as one might indeed have expected on glancing at the table of contents, which includes "coming up to the scratch," being "straight," "hardening up," "sticking in," and "playing the game." Though the book is really pitched in a high moral key, there is no trace of priggishness to be found. It is not a case of sugar-coating the moral pill, but taking the boy at his own level as regards language and ideas, and so getting the truth "home." We strongly recommend these talks to all teachers of older boys, as well as to parents and scout-masters, because we think they will find in them a storehouse of happy suggestion.

#### R. CHESTERTON AS HISTORIAN.

A Short History of England. By G. K. Chesterton. 241 pp. (Chatto and Windus.) 5s. net.

It is best to say at once that this is a nonsense-book, and not a book to be taken seriously. Historically it is to be classed with the "Comic History of England," but unfortunately it lacks, what Mr. Chesterton could so well have supplied, the incongruous illustrations which constitute half the charm of Beckett's burlesque. Mr. Chesterton does not profess to know any history, and happily he does not attempt to impart much precise information. He mentions only four dates throughout the whole of his flight of fancy; he gives no maps or tables; he provides no index. His book, in fact, is properly not historical at all, but autobiographical. It enables the reader to discover—what probably he had learned from other sources before—the persons and things that Mr. Chesterton passionately likes and those that he vehemently dislikes. It appears that he loves the Romans, the Catholic Church, the monks, the Crusaders, the medieval guilds, and the modern trade unions. His hatreds are more extensive: they include Teutons, Danes, Iconoclasts, Saracens, Jews, Puritans, Militarists, Vegetarians, Teetotallers, Parliaments, Political Parties, Poor Laws, and Germans.

The note of passion and prejudice is dominant throughout, and it tends to destroy the amusement which might otherwise be derived from the spectacle of Mr. Chesterton's topsy-turvy presentation of events. Mr. Chesterton apparently was oblivious of the results of all historical researches carried on since the days when he left school; he calls the Vikings "savages," in spite of the recent revelations of their civilisation admirably summed up in Prof. Mawer's little handbook; he dismisses the reign of Edward II. as "a mere interlude" in face of Prof. Tout's conclusive demonstrations of its cardinal importance; he knows nothing of Prof.

Ashley's treatment of the guilds and their disendowment, or of the numerous modern works on the Peasants' Revolt, although this event is to him the turning point of English history. In his account of it (p. 125) he actually conveys the impression that the peasants never reached London at all!

Whenever wild generalisation gives way to specific statement error may be confidently looked for. It is, for example, incorrect to say that Caesar conquered Britain (p. 8), that Britain was directly Roman for fully four hundred years (p. 10), that Mercia was the last of the English kingdoms to be converted to Christianity (p. 35), that children often organised a crusade (p. 69), that manors were originally the *villae* of pagan lords, each with its population of slaves (p. 91), that the deposition of Richard II. was the first example of such a thing (p. 127), that Margaret of Anjou was the wife of Henry V. (p. 129), that Henry VIII. sought his divorce from Pope Leo (p. 141), that the Pilgrimage of Grace involved half the counties of England (p. 146), that the disendowment of the guilds destroyed them as industrial organisations (p. 150), or that the medieval guilds had any essential resemblance to modern trade unions.

The truth is that Mr. Chesterton has passed under the powerful and disturbing influence of Mr. Hilaire Belloc, and has here undertaken, in the interests of Mr. Belloc's campaign against Puritans, parties, Parliaments, and politics, a piece of work for which he has no qualifications whatsoever.

One may well ask why history should be treated with a levity and contempt which are bestowed on no other subject except theology. No person who was entirely ignorant of his theme would presume to write a volume on any department of science or mathematics. Why should the affairs of God and man be allowed to be the happy hunting-ground of any irresponsible amateur who happens to have a knack of turning phrases?

F. J. C. H.

#### RECENT SCHOOL BOOKS AND APPARATUS.

##### *Modern Languages.*

A Junior French Course. First Year. By E. J. A. Groves. vi + 183 pp. (Blackie.) 2s. 6d. net.—Mr. Groves is known as the author of some useful books on reform lines and as a teacher of considerable experience. The preface to his new volume arouses pleasant anticipations; all he says is quite sound. He has been impressed by the frequent demands for greater grammatical accuracy, and has decided to give "far more space to the very elementary notions of grammar than has generally been devoted to them since the advent of the Reform method." He even repeats the assertion that "at the present time it is *much more common than in pre-reform days* to find that children who have been learning French for three or more years repeatedly make the most glaring blunders in very simple points of French grammar"; we should like to see some evidence in support of the words we have italicised. Mr. Groves says that his vocabulary is fairly extensive; he maintains that the child learns new words quickly, "and, alas! forgets them with equal rapidity, if care is not taken to fix them indelibly in his memory by frequent repetition and reiteration." When we now turn from promise to performance, we cannot resist a feeling of disappointment. The important question of the pronunciation receives scant attention: a list of the international symbols, with specimen words and the transcription of words in the vocabulary, is all. The early lessons proceed simply enough, the common start with classroom objects being made.

Soon, however, we are surprised by the introduction of rather unusual words, e.g. "amer" and "fiel" on p. 15, and look in vain for the "repetition and reiteration" postulated in the preface. We inquire further into the vocabulary, and find that it is not merely "fairly extensive," but enormous; the list of words at the end of the book contains about 2,000 words, and it is not even quite complete. How such a vocabulary "can be learned and well assimilated by the average school child in the average school year" is a puzzle. A fair proportion of the words are not "first-year words" at all, e.g. "mulet," "lessive," "théâtral." In order to provide adequate repetition of all these words the book would have to be twice its present size; there is no gain in introducing words only that they may be forgotten. As for the grammar, the new rules are skillfully introduced; but here again we are surprised to find that Mr. Groves, in confining himself to "very elementary notions of grammar," should think it wise to give in his first-year course the plurals of "bail," "soupirail," "vitrail," and of "chacal," "festival," "régal," and even "fatal." As is so often the case in first courses, the material has not been selected with sufficient care; the "average child" getting through this book in the "average year" will have tried to absorb far more material than it can digest.

### Classics.

*Cicero: Pro Roscio Amerino.* Edited by A. H. Birch. xvi+151 pp. (Southall and Co., Newport, Mon.) Price not stated.—We welcome this edition of a speech so admirably suited for school reading as the "Pro Roscio" undoubtedly is; though lacking the idealism of the "Pro Archia" or the sustained dignity of the "Pro Lege Manilia," it is one of the very best of Cicero's speeches for boys to read, both because of its comparative easiness, which makes it possible to be read at the pace necessary to sustain interest, and because a competent teacher can so readily teach from it a great deal about rhetorical Latin prose. Mr. Birch has done his work well; the review of the circumstances of the times in the brief introduction is as lucid as it is succinct, and the notes have been written with great care and understanding of boys' needs. If they err at all, they err, in our opinion, on the side of explaining too much; so we think that Mr. Birch should not grumble at the scarcity of paper, which—as the preface tells us—has forced him to curtail his comments. He would be more justified in reproaching his publisher with the *quality* of the paper which he has deigned to bestow upon the book. The vocabulary is not arranged alphabetically, but by chapters—an expedient which, however immediately helpful, is not ultimately good. Nevertheless, it is a very useful edition, which will, we trust, induce many teachers who would not otherwise have done so to read this speech with their classes.

*Lingua Latina: Secundus Annus.* By C. L. Mainwaring and W. L. Paine. 101 pp. (Clarendon Press.) 2s. 6d.—A melancholy interest attaches to this book as the last piece of work by Mr. Paine before he fell in Gallipoli. The book was begun by Mr. Paine and Mr. Mainwaring; it has been finished by the latter. The title describes it. It is on the modern oral lines, intended to satisfy the problem of inculcating a "grammatical conscience" in the pupil with regard to subordinate clauses, especially those involving the use of the subjunctive mood. The book has four parts. The first consists of twenty-four passages for reading (with questions) describing incidents in the early history of Rome, such as the stories of Romulus and Remus, the rape of the Sabine women, Horatius, and Coriolanus.

The second has fifty-five grammatical exercises dealing with the formation of various kinds of composite sentences. The third is a grammatical résumé of accident and syntax required in the book; and, of all, there is an index of words. There are also maps of Rome and the surrounding district. It is, of course, all written in Latin. There is no need to praise it. Teachers of the new method will welcome it and find it useful, and by experience will probably develop something better, as, after all, they are still in the experimental stage. Mr. Mainwaring is, however, not quite sound in his quantities. In his introduction he nods like Homer, forgetting *dormitat Homer*. The following also are the correct forms: *cūncti* (p. 5), *örnávisse* (p. 13), *sē*, *ā* (p. 14), *dēliberābant* (p. 24), *ī* (p. 26), *intrā* (p. 30), *poscit* (p. 31), *qui*, *quōmodo* (p. 32), *nōnnūlli* (p. 35), *ascendō*, *ascēnsus*, *sūrsum* (p. 36), *mārium* (p. 63), *trēdecim* (p. 74). Would not *significat grex* be better than *quid est grex* (p. 74)? The comma after *itinere* (p. 21) should be removed; there is also a misprint in the footnote of this page. *Primum* (p. 34) should be *primō*.

*Ad Limen.* By C. F. Walters and R. S. Conway. xi+120 pp. (Murray.) 2s. 6d. net.—In this book Prof. Walters and Conway present us with reading lessons and exercises for the second and third years studying Latin, which are intended to be supplementary to those contained in the authors' well-known "Limen." They are based upon the vocabulary and the order of accident and syntax in that book, and are carefully graded. The English-Latin exercises are, of course, of the old familiar type—disconnected sentences to exemplify specific points of syntax. You should not mind them being disconnected so much only they were made of more human interest to a boy, and for our part we fail to see why anyone who would take the trouble to do so should not think out suitable sentences. As the book proceeds the sentences give way to connected pieces of narrative in which we find the usual lack of any attempt to engage the interest of a boy. The Latin-English reading lessons are superior from this point of view, and we could wish that the authors had shown even as much understanding of boys in the English-Latin exercises as they have exhibited in their selection and adaptation of the matter for the reading lessons. The book is well printed, and has been compiled with extreme care and accuracy.

*Continuous Latin Prose.* By H. J. Dakers. xi+385 pp. (Rivingtons.) 5s. 6d.—This is a link between work on an elementary "exercise" book and Latin composition of scholarship standard. The pieces for translation are interesting little stories or pieces of narrative, and Mr. Dakers is to be congratulated upon his attempt to gain the interest of his pupil, for, as we read in the preface: "To feel that he is putting a story into Latin—such a story as Cæsar might have told—will perhaps awaken more interest in him than the successful solution of a series of language puzzles. Such humanity is worthy of a direct-method teacher, and we rejoice to see it in the author of a book which deserves to become the modern counterpart of the 'Bradley's Arnold' of our own schooldays. There are more than twenty pages of introductory hints which, besides other good things, contain an excellent analysis of the way in which a Latin period is built up. The syntax itself is full (quite sufficient for all school purposes) and clearly stated; there are nearly 200 pieces for translation, a special vocabulary containing many Latin idioms grouped round common English words, and also a general vocabulary. Altogether it is a book to be welcomed, and should prove extremely useful."

**English.**

*The Romance of King Arthur.* (Malory abridged.) A. W. Pollard. Illustrated by Arthur Rackham. pp. (Macmillan.) 10s. 6d.—This beautiful quarto, worthy of Malory. It would require an expert to know the changes in the text, though anyone who has the Morte well might point to a few omissions. Look of the whole book is distinctly of Malory's, and unless we print in black letter again we not have anything more suited to the requirements of a school library, for we take it that the book stands will not become a class-book. The binding is demure, and the whole result admirable. Most of Mr. Rackham's illustrations are worthy of the great poet, and some touch a splendid level; the picture of the maiden with the Grail in her two hands is alone worth framing separately, and we shall be surprised if no attempt is made to obtain a reproduction of this beautiful figure. If it is reproduced, let us hope it will not be out of the true, as it is in the volume. One or two pictures do not scruple to introduce us to the court of King Arthur. Surely, also, in this picture Mr. Rackham has added to his credit. There are sixteen illustrations in colour and many in black and white; the printing of them is without a flaw. We wish the preface were as worthy as the book as all else is. Mr. Pollard really does tell the story of Malory, his work and his English, all, but confines himself to a rather lukewarm defence and doubtful criticism of chivalry. And a good deal of the valuable space is taken up with the defence of an editor; anyone knows that for school stories Malory does require some editing. But the scholarly preface to Malory has not yet been written of any. This volume will add still more to knowledge of the great book, and will point again to a time that never was and always will be believed for it is only the critics who have to say that Amadas killed Amadis. No one will ever kill Amadis.

*Précis Writing for Beginners.* By G. N. Pocock. pp. (Blackie.) 2s.—One criticism of these exercises is allowable, and it is strange that one who has edited the work so well has not added a few more pages. The introduction, though short, is excellent, but there are no specimen précis given. If the pupil had before him a bad précis, a good précis, and a specimen of précis actually sent up to the writer by his pupils, the value of the book, especially for the self-educator, would be doubled. But the exercises are admirable, and the notes at the head of the extracts do good help.

*The Prisoners' Friends.* By Constance Wakeford. Illustrations by G. Soper. 154 pp. (Headley.) 2s. 6d. Rarely does so beautiful a little book as this make a double appeal. The story of Elizabeth Fry and John Howard, admirably told, is strengthened greatly by the coloured and uncoloured drawings. The object, take it, is to enforce the saner view, not of the criminal, but of his treatment. Appropriately enough, afterward is written on the Junior Republic, and Galsworthy's "Justice" is not forgotten. Miss Wakeford has also written "The Soldiers' Friends," and the same illustrator has helped her other story. As it book or as reading book in school, it seems to us that this volume would be equally welcome.

**History.**

*The Book of the Happy Warrior.* By Henry Newbolt. xiv+284 pp. (Longmans.) 6s. net.—Sir Henry Newbolt has written a fascinating book for boys, and one which accords well with the proper spirit which has been engendered in them by their country-

men's tasks and achievements in the present war. It is a book of chivalry, and its stories centre round what is best and noblest in the necessary warfare of the world. The stories are not in substance new; they are heroic tales of the Middle Ages. They are based on the narratives of old poets and chroniclers; but Sir Henry's setting of them is new. None of them lose, and many of them gain immensely, through their editor's labours, for Sir Henry is a master of the English language and a prince among storytellers. Hence, happy the boy who receives this book as a gift or as a prize, and in it reads the stories of Roland, of Richard Cœur de Lion, of St. Louis, of Robin Hood, of Bertrand du Guesclin, of the Black Prince, and of the Chevalier Bayard.

*The Discovery of America, 1492-1584.* Edited by P. F. Alexander. xviii+212 pp. (Cambridge University Press.) 3s. net.—This is a volume in the interesting series of "Cambridge Travel Books," planned, and so far executed, by Mr. P. F. Alexander, of Hertford College, Oxford. It provides modernised and judiciously abbreviated records from contemporary sources of six early voyages to the New World. Three of the six are quite properly the famous voyages of Columbus, the discoverer of the hemisphere. The remaining three are Cartier's voyage of 1535-36, Gilbert's voyage of 1583, and Amadas and Barlow's of 1584. The volume is admirable as a source-book, whether for geographical or historical study. For it provides important original narratives, linked together by unity of subject-matter, authoritative and self-explanatory. There are sixteen maps and illustrations, also drawn from authentic sources, and so really illuminating and not merely picturesque.

*The Story of the French Revolution.* By Alice Birkhead. 236 pp.

*Stories of the Scottish Border.* By Mr. and Mrs. W. Platt. 256 pp. (Harrap.) 1s. 9d. each.

The volumes before us are the two latest additions to Messrs. Harrap's attractive series, "Told through the Ages"—a series which comprises now not far short of half a hundred items. Both volumes are good; they are at one and the same time thoroughly interesting and highly instructive. Both, moreover, are illustrated in a manner which should greatly increase their charm in the eyes of the young folk, for whom they are in the first place intended. "The Story of the French Revolution," of course, necessarily follows familiar and well-trodden paths. It would be difficult to say anything both new and true concerning that event—the most important episode in modern history prior to the outbreak of the present war. It is enough that Miss Birkhead tells the story lucidly and with careful elimination of the dull portions.

"Stories of the Scottish Border" deals with history of a very different type. Compared with the doings of the Girondists and the Jacobins, the adventures of the "stark, moss-trooping Scots" were trivial and insignificant. Nevertheless, the history of the Border is full of the fascination of primitive romance, and just because it is remote and obscure it is also less familiar to the average reader. There should be many who will welcome an introduction, through the medium of Mr. and Mrs. Platt's delightful collection of stories, to such people as Sir Patrick Spens, Black Agnes of Dunbar, Fair Helen of Kirkconnell, Johnnie Armstrong, and others of that ilk. In some cases they will be thankful that their introduction to them is merely literary and not literal.

*Pages of Britain's Story.* Edited by J. Turrall. 325 pp. (Clarendon Press.) 2s. 6d. net.—Mr. Turrall is already well known as a skilled exponent of the art of teaching history by means of illustrative extracts

from documentary and other sources. His volume of "Illustrations to British History" contained contemporary evidence respecting a number of leading events in our island story from the landing of Cæsar to the Crimean War. The present work supplements this earlier volume by giving extracts from historians and chronicles covering the period A.D. 597-1898. The sources from which the extracts are made are not so strictly contemporary as in the "Illustrations," nor do they always rank quite so high as authorities. But they compensate for these scientific defects by exceptional vividness and interest. There are sixty-five extracts in all, the first being taken from Bede, the last from Steevens's "With Kitchener to Khartoum." In the hands of an imaginative and enthusiastic teacher the volume will serve to increase the interest of the history lesson. It should certainly find a place in every school library.

*Our Sea Power, its Story and Meaning.* By H. W. Household. xviii+179 pp. (Macmillan.) 1s. 6d. net.—This book is issued with a foreword by Admiral Lord Beresford and with the cordial commendation of the Educational Committee of the Navy League. It contains a sketch of the rise of British sea-power, biographies of leading seamen, accounts of great naval events, and an exposition of the vital importance of the command of the ocean to the existence of the British Empire. A number of well-chosen illustrations help to make it attractive to children. It is a valuable and timely little book, and one the use of which in schools can do nothing but good to the cause of sound citizenship.

### Science and Technology.

*Rustic Sounds and other Studies in Literature and Natural History.* By Sir Francis Darwin. 231 pp. (Murray.) 6s. net.—Sir Francis Darwin traverses a broad field in this collection of fourteen essays and addresses. He shows himself to be not only an inquiring student of plant-life, but also a musician—he is one of the few who can play the tabor and pipe of the Morris dancers—and a man of letters in the best sense. The papers on the movements of plants, Stephen Hales, and picturesque experiments embody exactly the kind of spirit required in science teaching: they deal with common matters of plant physiology in a most stimulating way, and will lead many readers to repeat the simple experiments described. Three of the addresses deal with education in science and science in education. Like his father, who, referring to Shrewsbury, said: "Nothing could have been worse for the development of my mind than Dr. Butler's school," the author says that he gained nothing of his appreciation of the beauty of literature from his classical studies at school. "We are taught Latin and Greek because, as we are assured, they introduce us to the finest literature in the world. To most boys they do nothing of the kind, and are an intolerable burden." When the author went to Cambridge in 1866 the teaching of science was as badly done there as anywhere. "I sometimes wonder," he says, "that fire did not descend from heaven and destroy a University which so sinned against the first elements of knowing, in neglecting the distinction between what we learn by our own personal experience and what we acquire from books." The volume includes biographical papers on Sir Francis Galton and Sir George Darwin; and among the subjects of other essays are Jane Austen, rustic sounds, the pipe and tabor, and war music. The whole collection is a delightful combination of literature and science, revealing large interests as well as accurate knowledge. We believe, however, the author is not correct in his remark on p. 4 that "a Canadian robin must surely make a song like ours,"

for the American "robin" is really a thrush (*Turdus migratorius*).

*Name this Flower.* By Gaston Bonnier. Translated by G. S. Boulger. xii+331 pp. +64 coloured plates (Dent.) 6s. net.—Prof. Bonnier has done an inestimable service to young botanists and flower-lovers generally by devising this key, which makes it easy for anyone to identify some 700 species of flowering plants and ferns. The characters by which the plants are distinguished in this scheme are all plainly recognisable without any previous knowledge of botany and are so grouped that at each step the user decides which one of a number of possible characters his specimen possesses. This question settled, he is directed to another set of alternatives, and presently arrives at the name of the plant. To one accustomed to the laborious determination of species by classificatory characters in the manner of the ordinary floras the criteria used in this book seem at first sight highly artificial and unscientific, but experience has convinced us that, for purposes of identification merely, the scheme is on thoroughly sound principles. It certainly succeeds in its object, as we have proved by putting it into the hands of a child of ten, who, without any previous experience or knowledge of technical terms, found out the name of an unknown plant (toadflax) in a few minutes. The value of the book is increased by 312 illustrations in colour and 212 black-and-white diagrams in the text. There are general indexes and other useful lists. The translation into English has been carried out carefully and successfully.

*Drawing for Builders.* By R. Burdette D. (London: Chapman and Hall; New York: Wiley.) 7s. net.—The author states that "this book is intended to serve as a basis for a problem course in elementary architectural drawing." Limited to exercises in mechanical drawing, the work will undoubtedly serve a useful purpose, as it is well graded, progression from simple straight-line drawing to preparation of complete details being arranged in a series of easy examples. In some of the exercises lettering and dimensions could, with advantage, be arranged more neatly, and although it is intended to be of use to the builder, no reference is made to the examples given of the use of simple steel work. We feel this is regrettable, as valuable exercises on the important branch of modern construction could have been introduced. We have regarded the work from the point of view of its suitability to elementary technical students in this country, and are of opinion that it would appeal more strongly to American teachers and students than to our own. The chapter on instruments and materials is very good, as the initial training of all craftsmen should be in the care and use of the tools they are required to manipulate.

### Pedagogy.

*The Play Way: an Essay in Educational Method.* By H. Caldwell Cook. 367 pp. (Heinemann.) 8s. net.—Mr. Cook's work has often been sympathetically treated in these pages, and though he pleads warily for hurried work as an excuse for shortcomings in the present volume, the same sympathy may be extended to one who is so whole-heartedly the friend of the Boy, or, as he calls him, the Littleman. His plea is for the rehearsal of life at school, and herein lies the strength of his position; his weakness, it seems to us, is that he thinks no schools (except the elementaries) are trying his "method." It is the old story over again. We occasionally meet with a Mr. Cook, a Mr. Egeria, an Arnold, and a Francis; but they are too busy with their art that they never find their ow-

ret, and never think that it may be of importance a secret, and they work, and vanish, or they write books which never yet communicated a secret to anyone, or they live a life and the secret is uncaught. The platitudes (we beg pardon for the word) with which the writer fills his pages are weary reading for those who have heard them for so many years; and there is nothing new in saying in italics that "if boys are to be taught by means of play the master must be a genuine interest in the play." When Mr. Cook comes from France and shows a number of picked instances how to take a genuine interest in the play he has begun the most important chapter in his

The chapters in this volume deal with the boy trusting himself, his comrades, and his teacher. It is always fascinating, and, as his comrade Cook sees, can do things as well as men. Ilions and ballad-singing, lecturing and football, the dramatisation of Bible and Malory and Beowulf, the making aeroplanes and costume for "Macbeth" give Littleman his chance; he is bent, as every educator knows, creating. *Imagination*, as Mr. Cook tells him, is at the teacher needs, not learning—at least in the first stages. And it is imagination that the teacher lacks. Poor teacher! He has heard it so often. Meanwhile the friend of Littleman prints Fifth Form ballads and Fourth Form maps, and fills his interesting book with photographs of his boys, and, we suppose, waits the hour when England shall consider the pursuit life something greater than that of wealth, and the understanding of a strike something of more importance than the reading of a palimpsest. More power to Mr. Cook's elbow, even though his book as an "Essay in Educational Method" may be set at naught by the methodologists.

#### Miscellaneous.

*St. Luke.* By Dr. Charles Knapp. (Murby's Larger Scripture Manuals.) viii+357 pp. (Murby.) 3s. net.—In the size and price this is quite the most exhaustive commentary we have yet seen on the third Gospel. It is wonderfully comprehensive, and that without either overloading or padding. The introduction is a fine piece of work—a veritable book within a book—and is surely the result of much independent thought and research as well as of careful consideration of the conclusions of other authorities. That infinite pains have been expended, not only in the writing and compiling, but also in the arrangement and printing of the book, is obvious on every page. "A Word with my readers" takes the place of the usual preface, and in Dr. Knapp unconsciously indicates a not unusual, but very welcome, note in commentative and critical work. Nor will the reader be disappointed, for here he will find not only a scholarly and dependable guide to historical, literary, and comparative criticism, but also a refreshing, broad-minded, and sane devotional study. No similar English commentary has yet appeared that gives so complete and able an analysis of this most important writing of the beloved physician, and at the same time so sympathetic and winning an exposition of the life, work, and teaching of his great Master. To study the book will result in a sound knowledge of the contents of the third Gospel; it will also result—and here so many commentaries fall unnecessarily short—in a generous and well-balanced knowledge of Jesus of Nazareth and the new order He came to inaugurate. Many sections of the book will strike the reader with a vision and thoughtfulness that are refreshing and stimulating. "The Eschatology of Jesus" article, if not overwhelmingly convincing, is valuable—restrained and yet thought-provoking. The section dealing with "The Virgin Birth"

is entirely excellent, and is a fine example, amongst many others, of careful and logical reasoning. The explanations of the parables are marked by courageous and reverent treatment; that of "The Two Debtors" is particularly striking. Abundant indexing, headings and sub-headings, synoptic notes throughout, summaries and comparisons with the Revised Version, all materially add to the usefulness of this most excellent book.

*The Eurhythmics of Jaques Dalcroze.* With Introduction by Prof. Sadler. 64 pp. (Constable.) 2s.—This is a second and revised edition. It is not a reasoned or stated account of eurhythmics, but a carefully illustrated set of essays round the subject. All readers now know what this art claims; it is not gymnastics, nor is it dancing, nor yet music teaching; but rather the representation of musical impressions by physical rhythmic movement. It is the sworn enemy of technique viewed as a telos, and rather takes natural technique as a means. Attitudes are pauses; moving plastic is continuous; and the effect seems to be as much part of the audience as of the rhythmist, concentration being required from both. Its claims as an aid in neurasthenia may be wisely doubted, but there never has been, since the days of Pindar, any doubt as to its realisation of part of the secret of absolute beauty. The illustrations are excellent; but, except in a few cases, the flowing dress presents further difficulties of rhythm-realisation. No Greek would have issued such a book without pictures of youths, the natural beauty of whose forms in movement or repose is generally forgotten, except by the great artists of the world.

### EDUCATIONAL BOOKS PUBLISHED DURING OCTOBER, 1917.

(Compiled from information provided by the publishers.)

#### Modern Languages.

"Jean Robert Flambeau-potache." By M. A. Delany. 119 pp. (Bell.) With Vocabulary, 2s. net; without Vocabulary, 1s. 6d. net.

"Flips et Compagnie." (Stories of Animal Life.) By Marc Ceppi. 123 pp. (Bell.) 1s. 6d. net.

"Oxford Spanish Plain Texts":—Iriarte's "Fábulas Literarias." 78 pp. 1s. net. Samaniego's "Fábulas en Verso." 146 pp. 1s. 6d. net. Edited by J. Fitzmaurice Kelly. (Clarendon Press.)

"Oxford Russian Plain Texts":—Gogol's "Old-World Country House," Dostoevski's "A Christmas Tree" and "A Wedding." Edited by Nevill Forbes. Each 64 pp. (Clarendon Press.) Each 1s. net.

"A Russian Vocabulary." By R. T. Currall. 128 pp. (Harrap.) 4s. net.

"Spanish Commercial Correspondence." By A. F. Whittem. 330 pp. (Harrap.) 4s. 6d. net.

"The Spanish-American Reader." By Ernesto Nelson. 370 pp. (Harrap.) 4s. 6d. net.

"La Vida de Vasco Nuñez de Balboa." By M. J. Quintana. 144 pp. (Harrap.) 1s. 9d. net.

Mérimée's "Colomba." Edited by Otto Siepmann. (Siepmann's Advanced French Series.) xvi+216 pp. (Macmillan.) 3s. Key to Appendices, 2s. 6d. net; Word and Phrase Book, 6d.

#### Classics.

"Secundus Annus." By C. L. Mainwaring and W. L. Paine. 102 pp. (Clarendon Press.) 2s. 6d.

"Virgil and Lucretius." Passages translated by William Stebbing. (Longmans.) 4s. 6d. net.

**English: Grammar, Composition, Literature.**

- "The Contemporary Short Story." By Harry T. Baker. 288 pp. (Harrap.) 5s. net.  
 "Whittier and his Poetry." By W. H. Hudson. 144 pp. (Harrap.) 1s. 6d. net.  
 "Dictionary of Similes." By F. J. Wilstack. 532 pp. (Harrap.) 10s. 6d. net.  
 "The Story of the Canterbury Pilgrims." By J. W. McSpadden. 224 pp. (Harrap.) 5s. net.  
 "Fairy Tales from Grimm." By Ethel Betts. 128 pp. (Harrap.) 3s. 6d. net.

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**Some Unsatisfactory "Proofs" in Elementary Geometry.**

THE writers of modern up-to-date text-books in elementary geometry have directed their efforts constantly to the task of smoothing the path of the beginner by avoiding the rigid formalities and tedious reiterations which clogged his progress in the old-time editions of Euclid's Elements. The most obvious way to cut down the proofs of many propositions, so as to make them less tedious and enable the beginner to get a better grasp of their general drift, is to omit all mention of any particular cases which may occur. Such particular cases may as a rule be left as an exercise for the ingenuity of the pupil who has mastered the proof of the general case. Most teachers welcome this change, and would be glad to see its range extended, especially in the treatment of equality of areas.

On the other hand, it must not be forgotten that a proof by *reductio ad absurdum* is no proof at all unless every possible case has been investigated, and an independent proof given where necessary. It is most important that this should be duly impressed upon the learner when he begins to use that method.

Among the propositions now regarded as necessary bookwork is one which did not appear as such in the older editions of Euclid, viz.:—If the line joining two points subtends equal angles at two other points on the same side of it, these four points lie on a circle.

thus, in Fig. 1, if the angle  $ACB =$  the angle  $ADB$ , in A, B, C, D lie on a circle.

The proof of this proposition, which is to be found in all the text-books, is far from satisfactory as a *real* proof.

It begins with the assertion: "If the circle ABC does not pass through D it must cut AD (or AD produced) in some other point  $D'$ ." It is then assumed that if  $D$  is outside the circle,  $D'$  must lie between A and D. If the arc  $ACB$  is a small one, D may lie so that neither DA nor DB is cut by the circle, as is shown

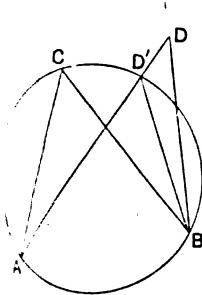


FIG. 1.

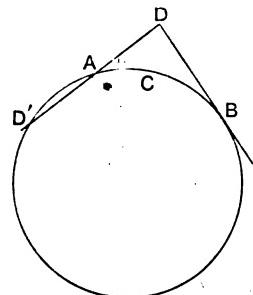


FIG. 2.

Fig. 2, where  $DB$  is not cut by the circle at all,  $DA$  is cut by the circle, but not between A and D. The proof given does not apply to this case, a fact which necessitates its separate consideration in a *ratio ad absurdum* proof. The most unsatisfactory part of the proof lies in the assertion upon which the proof is based—an assertion which can have no justification whatever except the convenience of the argument. It is not true that the circle must cut  $AD$  at some point, and it is not true that the other point,  $D'$ , must lie between A and D.

To some of the text-books the proof that a quadrilateral is cyclic if a pair of its opposite angles are supplementary is open to the same objections, and is based upon the same unsound assertion, while the alternative proof for the case omitted varies more widely from that of the case discussed. The proof is therefore even more unsatisfactory. The multiplication of cases may be simply avoided suggested by Figs. 3 and 4.

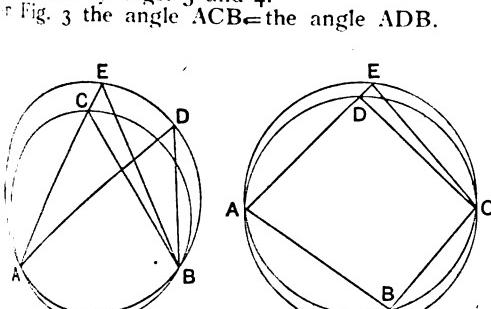


FIG. 3.

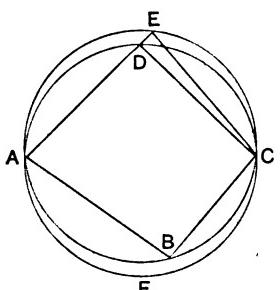


FIG. 4.

If the circles  $ACB$ ,  $ADB$  do not coincide, one of the angles  $ACB$ ,  $ADB$  must fall within the other. Suppose  $ACB$  to fall within  $ADB$ . Produce  $AC$  to meet the arc  $ADB$  at E, and proceed as usual to prove that the arc  $ACB$  cannot fall within arc  $ADB$ . Similarly, the arc  $ADB$  cannot fall within the arc  $ACB$ ; therefore the circles  $ACB$ ,  $ADB$  coincide, etc. In Fig. 4 the angles  $ABC$ ,  $ADC$  are supplementary. If the circles  $ABCE$ ,  $ADCF$  do not coincide, one of the arcs  $ADC$ ,  $AEC$  must fall within the other.

Suppose  $ADC$  to fall within  $AEC$ , and prove that it cannot do so by the method suggested by the figure.

By a similar proof it may be shown that  $AEC$  cannot fall within  $ADC$  (it will be necessary to join  $AE$  and produce it to meet the outer arc).

Therefore the circles  $ABC$ ,  $ADC$  must coincide.  
CECIL HAWKINS.

#### A Parents' Union School at Work.

FOR many years hundreds of children educated in home schoolrooms have benefited by working under the P.N.E.U. Many schools are now on the register of the union, and it may therefore be of interest to those who know little or nothing of the P.U. school to hear how it is organised and of the results of its working in a day-school of twenty-five to thirty pupils.

Ten years' teaching experience in other schools, working on the ordinary lines, has enabled me to compare the usual practice with that of the P.U. method, and to estimate the result of the latter, which I have employed for three years in my own school.

Stated briefly, the principles that underlie the union are as follows:—

- (1) That children are born "persons."
- (2) That they have normally a craving for knowledge and full powers to deal with it.
- (3) That they require a mental food of "living ideas" which are for the most part contained in books.
- (4) That the attention necessary for the gaining and keeping of this knowledge is given spontaneously if the right books are used.

These principles are applied in the following manner:—

Pupils in the school are classed in six forms, entering in Form I. at the age of six years, and leaving Form VI. at seventeen or eighteen. A programme of work is mapped out each term, and a time-table supplied. All the book work is done in the morning; the afternoons are left free for games, handwork, art, and nature-study, and the lighter books set are read in the evening. "Preparation" in the ordinary sense finds no place in the time-table.

The curriculum set forth in the programme is a very wide one, and the "humanities" are given a prominent place in accordance with Pater's view, that "nothing which has ever interested living men and women can wholly lose its vitality." But it is the actual books chosen and the use that is made of them that are the chief features in the teaching of the P.U. school.

No text-books, but what Miss Mason calls "living books," are chosen for the children's use. They possess their own books, and are encouraged to take a pride in their library. By the age of thirteen they will have read Plutarch, Malory, Scott, Shakespeare, and will have become somewhat acquainted with classical, English, and European history and various branches of nature-study.

Few oral lessons, lectures, or notes are employed. Knowledge is tested by narration instead of by question and answer, and there are comparatively few corrections.

The pupils do all the work for themselves and get their knowledge first-hand from good books. In the lower forms these are read to the children, and after one reading only they must rehearse the story or lesson fully and in good language. In the upper forms the pupils read the pages set with attention once and then reproduce orally or in writing. The habit of reading with close attention is acquired easily by younger children, but those who have been allowed to pore over their lesson books and read many times without real attention take some time to acquire it, but even girls of sixteen do so after a little practice. As a result of this method of working pupils find knowledge delightful in itself and for its own sake,

without thought of marks, place, prize, or other reward.

Mathematics, science, and languages are taught orally, but books of recognised authorities on science are put into the pupils' hands, and in modern languages they begin reading classics from the beginning and reproducing them in the language being studied in the same way as in their English lessons.

Every term examination papers are sent out from the House of Education, and the examinations last a week. A representative set of papers is sent up from four forms working in the school. No looking up is allowed beforehand—there is no time—and the papers are tackled cheerfully and without the anxiety that is so often shown in "exam. week." If P.U.S. children take public examinations they do them in much the same spirit.

The training of children to work for themselves makes for resolution of character and fosters a spirit of self-reliance which should help them in qualifying for professional life and in becoming good citizens.

To be able to read and enjoy good literature is an unquestionable asset in any life, and the lives of those who can do so should be fuller and happier than others.

A realisation of their inheritance in the world of things and of books, and of the perseverance and purpose necessary to the attaining of that wisdom to which "all the gold of the earth is a little sand," is kept before the minds of the children as they look daily on their school motto: "I am, I can, I ought, I will."

C. D. LAWE.

#### **Traditional Association of French and German.**

I NOTICE in Mr. Osborne's article in last month's SCHOOL WORLD that he speaks of the "traditional association of French and German." But German is not in any sense traditional in England. The traditional education for an English gentleman is French and Italian added to the classics. All Jane Austen's elegant ladies aspire to Italian, and French seems to be taken for granted; only once is German mentioned, in the case of a person of extraordinary accomplishments. German is quite a newcomer, which has forced its way into England uninvited, like those who speak it, and its claims are much exaggerated. When the Germans cease to be politically important their rather grotesque language may retire to its proper place.

W. H. D. ROUSE.

Perse School House, Cambridge.

#### **Examination for Indian Civil Service.**

YOUR contributor allows no escape from the question whether the real or supposed interest of the schoolboy at home is to block a substantial amelioration in the administration of India.

We must abide by the recognised method of solving great problems. The Public Services Commission, a body specially appointed for the task, has devoted many laborious months in India and at home to the problem, and has decided that the India Civil servant must be selected at the school-leaving age. It would be a strong—not to say high-handed—act for the India Office to override that decision. It is therefore highly probable that the decision will stand.

Your contributor questions my estimate that 500 candidates will attend the new examination. I challenge him to state his own estimate. The future can then judge between us. No matter how great that number may prove to be, it is the duty of this country to foot the bill and supply the men in the required way, of course taking all possible precautions against damage to our educational machine.

Any other attitude would be inconceivably parochial. It was not by such parochial methods that the Empire

was built, and the present is not the moment they can be adopted.

Just look at your contributor's alternative scheme. The present probationary period has proved hopelessly inadequate. A change in the nature of the open competition, proposed by Mr. Leathes's Class Committee, is so completely to alter matters that the period instantaneously becomes sufficient. I yield no one in admiration of Mr. Leathes's work, cannot regard him as a magician who can upset the laws of Nature. No! the fact is that your contributor has not faced the problem fairly from the Indian point of view, and I call upon him to confess that he has reached first, last, and all the time, to English education:

I. N.

I AM not to be crushed by big words—not even by the invocation of the laws of Nature and charge of *lèse-majesté* (or something of the kind) for daring to suggest that when the Public Services Commission has spoken, its words are not sacrosanct. "I. N." thinks they are; and that makes any further discussion pointless. I can only wonder that he should think it worth while to try to obtain a "confession" from whom he regards as so grievously biased. As a matter of fact, I am quite impenitent, and consider it to maintain that an I.C.S. examination for school-leavers would be disastrous, and that such a competition as is indicated by Mr. Leathes's Committee would probably do what India requires, without damage (and probably with considerable advantage) to our "educational machine."

THE WRITER OF THE ARTICLE.

#### **The Secondary-School Examinations Council: A Correction.**

IN discussing the Secondary-School Examinations Council in your November issue, I said that it was doubtful whether certain of its members could be regarded as experts, viz. in the practical management of examinations and in the work of moderating. One of these, I mentioned, was Dr. Hadow; and it has been pointed out to me that he "was on the Examination Board of the Oxford Locals from 1884 to 1900, from 1891 to 1909 a Revising Examiner." I am afraid I only knew (from "Who's Who") that Dr. Hadow was "Delegate of Oxford Locals," and in itself did not seem sufficient to guarantee expert knowledge of the kind I had in mind; but "revising examiner" is presumably much the same as "moderator," and, this being so, the doubt I expressed stands clearly without justification. I have also been given other evidence of Dr. Hadow's keen interest in secondary education, but that, of course, was known to me. We are safe in crediting all the members of the council with this keen interest.

THE WRITER OF THE ARTICLE.

## **The School World.**

**A Monthly Magazine of Educational Work and Progress.**

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# The School World

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SIXPENCE.

## N INQUIRY INTO THE VALUE OF THE STUDY OF LATIN AND GREEK.

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### I.

MUCH of what has been written during the last year or so in this country on educational reform might have been leaded by the title "Classics *versus* Science." The title is a very narrow one, if it be intended to cover a general discussion of educational reform. In particular there is implied the suggestion that science must be the only, or at any rate the chief, substitute if classics are to occupy a much reduced place in the curriculum of school or college; though modern foreign languages and their literatures, and specially literature, history, and other studies in the mother-tongue, are alternatives for the increased study of which much may be said, and which should at least have the advantage of lessening the opposition to reform on the part of the conservatives; for they would provide the "human" element in education which, the classicists maintain, is the chief value of the study of Latin and Greek.

Another unfortunate aspect of some recent discussion seems to be this, that the attack on the classics has been so prominently (though not exclusively) associated with specialists in science, while the defence of classics has largely fallen to men who are, so far as the public can tell, innocent of any thorough training in the physical sciences. This is unfortunate in its effect on that wide public which is only too ready to scoff at the education which leads to such contradiction; for it suggests that the divisions on such questions are largely a matter of prejudice, or at least of individual experiences and tastes. Further, there is occasionally an

unhappy narrowness of thought and sympathy shown by both types of specialists. Some of the classicists show this in failing to recognise fully the essentially humanistic education that may be given without one word of Latin or Greek, or even of any foreign language; and this failure is the more astonishing in view of the fact that the Greeks themselves achieved their masterpieces of literature, philosophy, and history on the basis of an education which included no study of a foreign language. The Socratic method itself was a method in the mother-tongue.

On the other hand, the scientific critics of classical education sometimes speak as though such an education was entirely linguistic, forgetting that, if pursued far enough, the study of classics will bring the student into contact with a great variety of ideas on all aspects of human life, including discussions of fundamental problems in philosophy, politics, history, and aesthetics.

I have commented upon the disadvantages of the fact that so much recent educational controversy has been between specialists in science and classics. Nevertheless, it does seem that the focussing of the recent discussion round the topic "Classics *versus* Science" has been sound at least in this respect, that if any considerable time is to be gained in school or college for further scientific or other studies it will have to be by reducing the time allotted to classics. Hence the question of the value of classical studies becomes urgent, and it is the main purpose of these articles to discuss it. Incidentally I hope to suggest a scheme which may go far to satisfy the keen upholders of classical studies, while at the same time giving ample opportunity for reformed curricula in the case of the majority of pupils in secondary schools.

It should be made clear at once that this essay is concerned merely with the question of the value of a classical education for the average pupil and student. It does not

question the great value of a thorough course in classics, carried to an advanced stage, for selected students of special linguistic ability.

#### ARGUMENT BASED ON EXTERNAL EVIDENCE.

In the first place, it may be well to consider the evidence, so often urged in favour of classics as a means of general mental training, which is offered by the fact that such a large proportion of our prominent and capable men are men of classical training. This may be largely explained by the fact that, until quite recently, all the best boys at our principal schools studied classics, and that the pick of the university students also specialised in classics or mathematics. The scholarships offered by the universities and public schools have encouraged this tendency. Even when "modern sides" began to appear in our leading schools, only dullards were drafted on to the modern side. Thus we have only the right to say that classics, with mathematics perhaps, have served as eliminators of the weak. No doubt the fact under consideration shows that an excellent preparation for life *may* be given, at least in the cases of the ablest pupils, by an education in which a thorough course in classics is the main factor, but it affords no proof that these picked boys would not have done equally well in after life if their curriculum had not included classics, provided, of course, that other studies had been pursued with equal thoroughness.

A striking example of the use of this fallacious argument is afforded in the first chapter of the most recent, and perhaps the ablest, plea for classical education, Mr. Robert Livingstone's "Defence of Classical Education."<sup>1</sup> It runs somewhat as follows: In 1870 the German universities became open to students who did not know Latin or Greek, so that pupils of the Realschule, and not merely from the Gymnasia, were able to enter. After ten years' experience all the members of the Philosophical Faculty of Berlin University agreed that these non-classical students were inferior to the classical. Even the professor of chemistry observes

that the students from Realschulen, in consequence of their being conversant with a large number of facts, outrank, as a rule, those from the Gymnasia during the experimental exercises of the first half-year, but that the situation is soon reversed, and, given equal abilities, the latter almost invariably carry off the honours in the end; that the latter are mentally better

trained, and have acquired in a higher degree the ability to understand and solve scientific problems.

This statement, of course, ignores the fact that a principle of selection was at work. The boys who came from the classical Gymnasia were the most gifted by nature, coming from better-class homes, and they had also enjoyed more favourable early environmental influences. The best comment that can be made on the argument is the following story related to me by one who was a lecturer at a German university early in the present century. A certain German professor at the university sent his two sons to the Ober-Realschule. It was the first case in which a professor had been known to send his sons to such a school, and people were asking, "Are the professor's sons, then, really so stupid (*dumm*) that they have to be sent to the Ober-Realschule?" And this, it noted, was not merely ten, but thirty, years after there had been removed from the Realschule the stigma of its affording no entrance to the university.

Let us now turn to what we may call the internal arguments in favour of the classics. We shall deal in turn with the following:

- (i) The "general culture" argument;
- (ii) classics as a means of æsthetic training;
- (iii) the "mental gymnastic" argument;
- (iv) classics as a means of selecting the intelligent; and
- (v) Latin and Greek as bases for the study of other languages.

#### I. THE "GENERAL CULTURE" ARGUMENT.

This argument takes several forms, the chief of which is that the ideas—philosophical, political, scientific, legal, and æsthetic—of the Greeks and Romans form the chief basis of the whole culture of modern civilisation. The truth of this may be at once admitted. It may be that some extreme opponents of the classics would reply as follows: "Yes, but the fact that these ideas have been absorbed into our modern thought and civilisation makes it possible for us to study them in modern literature and modern institutions." We may however, admit against this the great value to be gained by studying ideas and institutions in their origin.

A more cogent reply to the first argument for classical studies is the following. Anything like full apprehension of classical culture is gained only by those who pursue the languages to an advanced stage. The average boy while at school must necessarily spend far the greater part of his time in mastering the language itself, and has comparatively little time and energy for the ideas themselves of

<sup>1</sup> Mr. H. G. Wells's highly diverting criticism in the *Fortnightly Review* (April, 1917), which I have read since writing this article, scarcely does justice to Mr. Livingstone's book. Also it fails to recognise the importance of converting the classicists themselves to the idea of considerable reforms. They are likely only to be irritated by, or amused at, Mr. Wells's article.

Greek and Roman thought. The specialist constantly in danger of forgetting this and estimating the value of his particular study on the basis of what it has done for him; and the honours university course in classics is intended to provide a wide education, at least in the humanities, touching as it must upon so many departments of human life and thought.

Now, if it is really desired to give the average boy some knowledge of ancient thought and institutions, a far greater knowledge could be imparted if even only half the time at present devoted to the study of Latin and Greek languages were given to the study of classical thought through the medium of English translations and to the history of Greece and Rome. Let us admit at once that translation can give the exact thought or meaning of the original. Still, who can dispute that the great majority of boys would know more about Greek and Roman history and thought if one-half, or even one-quarter, of twelve or fifteen hours per week spent upon languages for perhaps six or seven years in their school life were devoted to the study of the classical works through the medium of translations? Many know from bitter experience, the writer amongst them, that it is possible for a boy to go through the usual course of a grammar school and to possess at the end of it less knowledge of classical thought and institutions than could be gained through English translations and stories in two or three months—nay, weeks. Even after taking a degree in classics I confess that I found my knowledge of classical usions considerably inferior to that of a boy whose classical training was comprised, far as the languages were concerned, in a two years' course of matriculation, but whose knowledge of classical lore was gained through the medium of English.

In this matter of translations I think that specialists concentrate their attention too much on the advanced student, for whom, no doubt, the originals are irreplaceable. But how far are such refinements appreciated by the average pupil?

The testimony of some of the greatest classical scholars can be called in support of the present contention as to the value of good translations.

"Even the scholar," says Sir Samuel Dill, "may sometimes feel that the spirit of the 'Phædo' and the 'Republic' has passed into the English of the great Master of Balliol." Mr. Livingstone in his "Defence of Classical Education" admits that

with certain authors little would be lost, with others something would be gained [by translation]. North's translation of Plutarch is far more delightful than the late Greek of the "Lives"; Orrery has exactly caught the manner of Pliny the Younger; Thucydides of all the great writers probably suffers least from translation, which disguises his eccentricities but not his genius.

The present Master of an Oxford college, himself one of the finest classics in the land, recently said to me that no men he had known had seemed to catch so completely the spirit of Greek thought as a group of young men who had studied it enthusiastically, but only through translations. Henry Sidgwick in his essay on "The Theory of Classical Education" (in "Essays on a Liberal Education") says:

It would be absurd to say that an Englishman (particularly if he can read French and German) has any difficulty in accurately and thoroughly informing himself what sort of people the Greeks and Romans were. And it might, I think, be truly asserted, however paradoxically, that, even under our classical system, the greater part of the vivid impressions that most boys receive of the ancient world are derived from English works; from Pope's "Homer," Macaulay's "Lays," the "English Plutarch" (if they have the good fortune to get hold of that delightful book), and afterwards from Arnold, Grote, and Merivale.

Sidgwick, indeed, though himself a product of classical education, would go further, and contends that all study of ancient thought and history may be abandoned without loss.

I cannot but think that if we were debarred from Latin and Greek, a careful teaching of modern history and a careful selection of modern literature would supply our youth with all the stimulus, example, and warning that they require.

This is, I think, an extreme view, and one, in any case, unnecessary to press. At the same time some classicists are not very successful in combating it, at least when it is taken to refer to the average school pupil.

Finally, one of the main objects of the study of classical thought and institutions, as stated at the head of this section, is the better comprehension and appreciation of our own and of those of other nations of to-day. Yet when one thinks of the paucity of direct knowledge of these among schoolboys—especially as regards other nations—there becomes evident the absurdity of spending so much time over ancient foundations which, in most cases, are never to be built upon. Certainly it is possible to draw, with Mr. Livingstone, a sad picture of what would have been the fate of Western Europe if we had "never heard of Greece or Rome"; but, as a critic has suggested, we might as well ask, What would have been the fate of religion if we had never heard of

<sup>1</sup>See "Secondary Education after the War," inaugural address before the Education Society of the Queen's University of Belfast.

Palestine? Yet who suggests that the English translation of the Bible is inadequate for the average schoolboy?

## 2. CLASSICS AS A MEANS OF AESTHETIC TRAINING.

The second argument with which we have to deal refers to the aesthetic training given by a study of the classics.

It is not denied (says Mr. W. H. S. Jones, of the Perse School) that much can be done by the intelligent study of English literature. But the classics are strong where English is weak. Their beauty is simple, statuesque, severe, and easily appreciated by the young. Their merits are obvious and closely compacted. More style could be learnt from a book of Homer than from a book of equal size in any other language. ("The Teaching of Latin," p. 17.)

The replies to this argument may follow the same lines as those already used. It may be admitted that aesthetic form suffers much more in translations than does the substance of thought. But, even here, something of the beauty of Homer and of Euripides may be conveyed by means of the translations of Andrew Lang and Gilbert Murray. Further, the usual teacher of classics in school gives little attention to the beauty of the works read; and this is scarcely his fault, as the difficulty his pupils find in mastering the technique of the language demands their full attention for the language as such. For the sake of clearness and sound grammar the conscientious teacher will also generally sacrifice the style of English translation to literal accuracy, which may probably partly account for the bad effect which, it has been urged, the study of classics has on the English style of some students. And in so far as the beauty of the works is pointed out to the pupils, it is largely, as Sidgwick says, "the beauty of the parts, and even of minute parts, that they are taught to feel." Equally important, however, is the beauty of a work of imagination *as a whole*, and it is precisely this aspect of the beauty of such works that suffers least in translation.

But it is scarcely necessary to labour this point as to what aesthetic training can be got from the classics, when English literature itself is so incompletely studied at school. Too frequently a boy leaves school with only two or three of Shakespeare's plays read (often "disintegrated" rather), and with only snippets of the works of other great English writers studied. This is scarcely surprising when English has often to be content with one or two hours in the school week. What a thorough course of reading in English literature could be enjoyed if only one-half of the

hours given to classics could be devoted to English!

Even admitting that there are certain aspects of the beauty of our own literature which cannot be fully appreciated without previous study of the classical languages, the very doubtful point—surely this refinement of appreciation is only a thing for the few. What is the aesthetic effect of Latin and Greek on the average pupil? How little is our literature appreciated by the average class-trained youth, largely because only such an inadequate amount of time has been available for the study of the literature of his own tongue.

Furthermore, the argument for the use of classics as a means of aesthetic training places undue emphasis on the part which the beauty of *form* plays in the appreciation of literature. Our main object in this particular æsthetic education is, I take it, to encourage the youth to spend some of his leisure hours in the company of the great minds of the past and of the present. Now we can secure this end more certainly by leading the youth to take a keen interest in some particular subject-matter. The youth who leaves school with a keen interest in history, or the drama, or biography is likely to read great books. Though I am aware that rhythm may appeal forcibly to young people, interest in style or form as such is, on the whole, a relatively development. Interest in subject-matter is a much surer foundation for the habit of good reading.

As regards æsthetic education proper in the widest sense, instead of the prolonged training in Latin or Greek necessary for any appreciable æsthetic development, far better results might be gained in one year if part of the time were spent in acquiring further interest in pictorial art and the history of art, of which the average Britisher is so lamentably ignorant, and by a brief course in the appreciation of good music and in its historical development. (I do not, of course, mean the "learning of the piano," which comparatively few are fitted.) Who, in some such scheme, who would doubt that, in regard to wide æsthetic education, our votaries would be far better equipped than he is who is expected to pick up his æsthetic training mainly through the classics during those moments when he and his teacher can turn their minds from the difficulty of construing to the beauty of the original?

There is one further argument of Mr. Livingstone's which calls for comment in connection. It is that English literature "more enjoyed and better appreciated if it is not associated with classrooms, text-books, &c."

aminations." I think there is much weight in this argument, especially if one considers the usual way of teaching English literature in schools, when only an hour or two a week can be spared for English, and that, too, for the sake of preparing for an examination. But if it be true that the beauty of literature is spoilt by its association with class work, then surely Mr. Livingstone's argument falls upon himself—and with double force; for the difficulty and labour so inimical to the aesthetic attitude are still more prominent in studying a foreign language. It is only when they are read with ease that works in a foreign tongue can be aesthetically appreciated. Thus Mr. Livingstone's own showing the aesthetic training provided by the classics must be almost entirely confined to the advanced classes. For the average schoolboy, and probably for the pass university student, the faculty of construing and the effort of memory involved in reading Latin or Greek text surely give little opportunity for a truly aesthetic attitude to arise, for which easy comprehension is so essential.

It is, no doubt, a different matter when we consider the stage reached by a student pursuing an honours course in classics at the university. This is the second case, then, in which we find that an argument for the learning of Latin and Greek holds *only for those who pursue the study to an advanced stage*. We have already argued that, as regards the penetration of the thought of classical writers and the understanding of their institutions and history, an adequate knowledge can be gained by translations, and that the refinements of thought which cannot be expressed in the best translations and commentators can be appreciated only by an expert reader of the language. A similar argument seems to hold in reference to the aesthetic appreciation of the classics. These two modes of thought, then, both suggest that the classics should be studied thoroughly, if studied at all; but we seem so far to have no convincing proof of the value of only a few years' study of the languages at school, or even a short pass course at the university for the average student. As, however, it is difficult to disprove (as to prove) the argument that a full aesthetic appreciation, or better understanding, of the beauty of parts of our English or other modern languages requires some training in classical languages, there remains some possible justification for a fairly thorough study of Latin or Greek, or both, in the case of students who desire to specialise in the literature of English or other modern languages.

The weakness, however, of this contention lies here, that the better aesthetic training is

admittedly derived from Greek rather than from Latin, while, on the other hand, it is agreed that Latin is the more valuable as a basis for the study of English, French, German, Italian, and Spanish. Thus the temptation is to include both Latin and Greek in the preparatory course for students who wish to specialise in other languages, and time will scarcely permit of such a thorough study of both these languages as we have seen to be necessary (if either of the two main reasons for classical education so far considered is to hold) without a very serious diminution of attention to the student's main subjects.

It should be clearly kept in mind that our whole argument is concerned with the *average* pupil and student, or perhaps we should say with all except those of most marked literary or linguistic ability. I am not concerned to argue that for this small minority it is not possible to reach, even when at school, a standard in classical languages which will justify their study, even if the youth proceeds afterwards to specialise in other languages. But those of special linguistic ability constitute, after all, only a small minority of all the students in our secondary schools; and even in the case of this small minority, except for those who are definitely proceeding to an honours course in classics, the benefit derived from the study of two classical languages at school must have set against it the very serious encroachment upon the time which might otherwise have been spent in the more direct preparation at school for their subsequent university studies, and particularly in a great range of English studies.

I have throughout this discussion of the aesthetic value of a classical training taken classics at their best; but it may be worth while concluding this section with a criticism from Henry Sidgwick.

The pupils (he says in the article before mentioned) are told, dogmatically, that these authors "are perfect standards of criticism in everything that belongs to mere perfect form," that "the laws that regulate external beauty can only be thoroughly known through them," that "they utterly condemn all false ornament, all tinsel, all ungraceful and unshapely work"; and the more docile of them are apt to believe these dogmas to a degree that warps and oppresses the natural development of their critical faculties.

There is great danger in the predominance that classics are made to gain over their minds by the indiscriminate eulogy and unreserved exaltation of the ancient authors *en masse* which they frequently hear . . .

The truth is that the best classical models only exemplify certain kinds of perfection of form, that several writers that boys read exemplify no particular

perfection at all, and that some illustrate excellently well the precise imperfections that the enthusiast I have quoted [Mr. Thring] enumerates. How can it be said, for instance, that there is no false ornament in Aeschylus, no "tinsel" in Ovid, no "ungracefulness" in Thucydides, no "unshapely work" in Lucretius? In what sense can we speak of finding "perfect form" and "perfect standards of criticism" in such inartificial writers as Herodotus (charming as he is) or Xenophon? There is perhaps no modern thinker, with equal sensitiveness to beauty of expression, who (in those works of his which have been preserved to us) has so neglected and despised form as Aristotle. Any artist in words may learn much from Cicero, and much from Tacitus; but the profuse verbosity of the one, and the perpetual mannerism of the other, have left the marks of their misdirection on English literature.

• (*To be continued.*)

### SOCIAL SCIENCE FOR SCHOOLS.

By EDWARD B. CUMBERLAND, B.A., B.Sc.  
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London.

**T**O have been teaching social science in a public school in this country for nearly thirty years must be an unusual experience, and something said about it may not be without interest.

In the first place, it has been obvious how, since the experience began in 1889, on acceptance of a trust imposed by a far-seeing founder, the position of the science has been advanced and the ground it has gained strengthened and consolidated. It was possible in 1906 for Sir Ray Lankester in his presidential address to the British Association to say :

The most important general advance [in psychology] seems to be the recognition that the mind of the adult human being is a *social product*: that it can be understood only in relation with the special environment in which it develops and with which it is in perpetual interaction.

This advance, coupled with others that had been made, was destined, he added, to provide the basis for social science and an assistance in furnishing the necessary scientific basis of the art of education. Many enthusiastic workers in different countries have since extended and made solid the foundations of the science, and built upon them a substantial superstructure. Thanks to their labours, more is known to-day as to how much of what we understand by mind is inborn, and of the means by which additions to, and modifications of, Nature's bequest are made in after-years for the purposes of social life.

In the universities of America a professorial chair for the teaching of sociology is taken for granted, and little by little the science has made its way into the universities of this country, beginning with those of more recent foun-

dation, and eventually gaining recognition those of older growth. For instance the author of "The Golden Bouquet" is described on its title-page as fellow Trinity College, Cambridge, and professor of social anthropology in the University of Liverpool.

Outside the universities, social activities of public importance have been studied with the view of gaining more exact knowledge concerning them, and hence of directing them with increased confidence. This has resulted in the publication of many books on the social sciences, which secure wide circulation. To-day, in London alone, there are numerous classes of university standing on social science specially arranged for the benefit of workers in different lines of social work. It has come to be felt that social life in general will benefit by all exact knowledge that can be gained about it. Huxley said that life without knowledge of it was like card-playing without ignorance of the rules of the game.

The position of a teacher of a science improves side by side with the progress of his subject. He can teach with more confidence, and vagueness is dispelled from his scheme of instruction. As regards this particular science he may, if in a school, still feel singular and isolated, but outside his classroom he will find himself neither remarkable nor solitary. Here and there he may even perceive himself envied for having the good fortune to be in charge of work which has gained for itself widespread interest. For additional comfort, if he feels the need for it, he knows how vitalising is the influence of his work upon himself and all the school he is called on to control and inspire.

In the second place, the approach of society to science towards school work has also become obvious, and the immediate present supplies instances. "Education Reform," just issued as the fruit of the volunteered labours of a council composed of many well-known workers in education, includes among much that is noteworthy the Report of a Committee on Character Training (chairman, Canon Masterton), which training common sense seems light-heartedly to consider the whole and sole duty of schools. This committee apparently shared the widely felt need for a more exact knowledge of character than is supplied by Smiles and other equally earnest and equally vague writers. They therefore secured the help of the psychologist of the Education Committee of the London County Council, and his memorandum is separately printed, being the only one of more than a hundred submitted to the various committees to receive this special treatment. The psychology of character presented in it is based

chiefly on McDougall's "Social Psychology" (1908) and Shand's "Foundations of Character" (1914), both standard works for the school social science library. If the knowledge of character placed at the service of a committee, composed largely of teachers, was considered worthy of being printed for the use of teachers generally, it should surely be given also to the young, who stand in need of all possible guidance to assist efforts in self-training which they can be persuaded to take in hand. Such efforts are certain to prove far more effectual than those of teachers and others who try to serve them.

Now this is where school social science lessons come in. Instruction on the lines of the psychologist's memorandum can be given to boys of about fifteen years of age, with a certainty of its being listened to with evident interest, since it tells them facts they can understand and it is well for them to know. The distinction between the character, or equipment, of the individual's mind built up for him in the remote past by Nature, and the additional equipment, with its modification of Nature's contribution, which he must acquire for, and through the medium of, the associated life of men, shows a boy that for a full participation in the duties and privileges of social life he must further educate himself until he has accomplished his individual transformation from what he was at birth into a rational and responsible human being. He sees that the serviceable foundations of his future behaviour are laid for him not merely by kindly and beneficent efforts coming from outside, but also by himself through the exercise of his power of will. He learns, too, that man's task, since he entered upon a life in association with his fellows, has been to strengthen and extend that association until it includes all members of the human family inspired with mutual goodwill; while the initial equipment Nature has provided him with for the task is, unless a vague gregarious instinct or consciousness of kind is included, limited to the parental instinct, which makes for binding ties only between kith and kin. Whatever further equipment he needs must issue from the social life he builds up.

A boy who realises all this reads with admiration of, and pride and hope in, the race he belongs to, the story he finds in history of how man the world over has striven with many vicissitudes to lead his fellows to live together in larger communities, with a corresponding increase of co-operative strength, until one, in which the British boy is specially interested, has been formed which amounts to an aggregation of five hundred million human units. He

is also full of sympathy with failures that have had tragic issues, and with the welcome that man has given to the coming of every influence tending to promote goodwill among men.

In parenthesis it may be said that character teaching affords a natural opportunity for saying all that a sense of duty dictates on the sex instinct, with such discrimination as experience shows to be necessary.

It was, of course, inevitable that in a report on character training reference should be made to home influence. Parents can plead, in extenuation of the mistakes they are sadly conscious of making in their efforts to train their children, that they have only empirical knowledge to guide them, and that neither at school nor at university was any attempt made to place them in possession of helpful knowledge of character. The spread of such knowledge among prospective parents will do something to put an end to the reproach levelled at fathers and mothers of making unnecessarily difficult the work of school teachers.

It was good to find in "Education Reform" the need insisted on for research by teachers. So far as concerns character, the social science teacher of the future should be ideally equipped for making it. He will have in the school an ideal field for his work, and pupils to benefit by, and pass on, the further knowledge he gains.

Another assistance to the teaching of the science in schools is seen in the recent publication of numerous social histories. All aim at treating the life of the people of a nation as a whole. They show the contribution that each age makes to the social life of the ages that follow, and they do not neglect the notable contribution of man in the Stone ages. Generally speaking, they provide suitable material for social science lessons, and especially so when they point out the advance of man from the Old to the New Stone age, when *association* was beginning its work. Such histories are found to be of more living interest than those which were supposed to give them all knowledge of the past worth knowing.

In vol. i. of "The People of England: a Social History for Schools," by Stanley Leathes (1915), will be found the following (p. 40): "The rise of man from the ranks of the other animals began very slowly: slowly and slowly it has gathered speed." This, though a commonplace in a science text-book, is an arresting truth for a boy to find in a volume of history. The statement of it clearly invites the reader to find in the book before him the story of how it was that man rose, while other animals remained as they were; of the extent to

and direction in which he has risen, and of the expectation there may be of his further rise. The young reader will also naturally ask whether this rise has significance for him individually. Without doubt the history tells the looked-for story and answers the natural question if the reader fortunately possesses the clue; but it is not going too far to say that only his social science lessons will satisfy the boy in these respects. The significance of the truth such lessons will tell him lies in the fact that his mere possession of acquirements of mind which enable him to read the words in which the truth is stated, with such understanding as is his at the moment and his possible further comprehension, shows that he has himself risen, thanks to the labours of men in the past, to a wondrous height and with lightning speed, from the ranks of the other animals; and that a further rise is necessary, and also possible, if he will take all the advantage his natural gifts permit of the education provided by the social life of his environment. It is much to be feared that without further and special teaching he will pass over with but slight appreciation these and similar words, though they may, when fully understood, be of great service to him in gaining knowledge of himself and the world he lives in.

Geography, even more than history, has been bringing social science more in touch with schools. It began work in this direction at an earlier date, and has continued it more thoroughly and directly. In 1889 the Herbertsons wrote for school use "Man and his Work," which they described as the first attempt to present in a popular form the principles of human geography: "The importance of this branch of geography is so self-evident as to need no demonstration. Without it, neither the history of the past nor of our own times can be understood." Beginning with the simplest societies in which the effect of physical surroundings is "writ large," the book shows the increasing complexity introduced by new conditions and occupations by concrete examples of existing societies. In "Modern Geography," by Dr. Marion Newbiggin (Home University Library), we find: "The world is considered as the home of man, its physical peculiarities being regarded as interesting chiefly in their relation to man and his activities." Further illustrations could be given from many text-books written by men attracted to the teaching of the human aspect of geography both because of its intrinsic interest and value and because of the close links it makes with social science.

Indeed, each subject taught in schools has links with such lessons, for each represents

past achievements of man; and the attitude pupils is wonderfully altered if a little time devoted to telling them by whose labours they are asked to learn has been devised for the purposes of social life and is not an invention of the evil one for the infinite harassment of boys and girls.

The writer of "The Living Past" (191 F. S. Marvin, has provided an acceptable text-book for use towards the close of a course of school social science lessons. The following extract will show its usefulness for the purpose:

The past has made the present, and we, who are alive, have the future in our keeping; not that we can form it at will, but that it already exists in germ in us, and that we shall put upon it some impress, great or small, which will be traced back to us by retrospect of the future. To those who realise this, history becomes a matter of high practical import, as well as of theoretical import.

The romance of much of the achievement of man in Western civilisation is at the service of the reader of this book.

Of the extent to which social science has not merely approached, but also directly penetrated into, schools through civics teaching, it is not easy to speak. Books on 'citizenship' probably afford no real clue to it. They concern themselves for the most part with the machinery of government, national and local, as at present carried on. Now, parents even take little interest in this, however much it concerns them, and they seem content to leave their duties as citizens from the daily paper of their choice. But, treated from the point of view of social science, the story of the struggle by which representative and self-government has been gained for a nation is full of interest. So also is the story of the steps which have led to our having to-day, through local effort, roads and bridges, police, well-lit streets, schools etc., though we still lack the many amenities of life which localities can provide when those that dwell in them will it.

A narrative based on Mr. Sidney Webb's "The King's Highway" has been found to keep a class of budding ratepayers in high good-humour with gallant efforts to make the utmost possible use of public convenience while putting on others the cost of paying for them. An ingrained attitude of mind even in boys is strikingly revealed while a narrative of this kind is being told to them. They will laugh heartily and derisively at the mere mention of a "City Beautiful."

Very few of the schemes of instruction in civics used by individual schools have been published; but it may not be generally known that there exists in North London a "School

personal Service Association,"<sup>1</sup> which aims at encouraging the best form of social science teaching. It desires also to promote classroom instruction, and welcomes syllabuses of civics with the view of formulating one which may get with general approval.

Those teachers who are shy of social science, but welcome civics, can put into the latter as much of the former as they approve. In support of the contention that all who work in and for schools will be the better for knowledge of this subject, I may quote from Prof. Lloyd Morgan's "Psychology for Teachers":<sup>2</sup>

The school is a miniature community. Rights and obligations within the school life, duties arising out of these, the due balance of justice, take form in a practical field of intercourse demanding many forms of tact. For the boy the school does in large degree represent the State. . . . Happy is he if his school possesses a high ideal of what, as a community, it could be and do. . . .

Not communities only does America think schools should be, but "community centres" in which is carried on educational and social work for boys and girls, young men and women, and fathers and mothers; and the prospect of schools as centres of this kind seems large in this country at the present time. It is not a fact that the influence of a school exists, and has always rested, upon the degree to which it has looked on itself as a community, ever on the alert to serve the interests of all who work and live in it for certain hours during the year, whether the interest considered is that of subjects, mode of teaching them, mutual relations, or social activities? If more knowledge is available for the direction and inspiration of communities, why not use it? How community life is the study of social science, and all that it has learnt and teaches can with advantage be carried into practice in my community, however small or large, whether a village school or the United States of America, the present President of which has been a social science student and writer, and is now a practical worker in a wide sphere.

Prolonged interest in a cause is apt to bias judgment, but it is claimed that the study of this science can lend further illumination to those who must tread the ways of life, and they need all the light they can get from any source. If the heart of it is entered into, it may even serve for additional inspiration. The enthusiast expects shocks and can be much disturbed by them. Very upsetting for the moment was it to light upon a fine-sound-

ing utterance by Shelley in his introduction to "Prometheus Unbound" (made at a time when apparently he was contemplating a treatise on conduct):

Until the mind has learnt to love and admire and hope and trust and endure, the reasoned principles of human conduct are as seed cast on the highway of life, which the unconscious traveller treads into dust, although it would bear the harvest of his happiness.

But are not love, admiration, hope, and trust (endurance may be taken for granted) special gifts of the young? And is not youth, therefore, the fitting time in which to sow, with hope of fruition, seed which, sown in after-years, might be trodden consciously into dust?

The science has made good its claim to be part of the education of all who desire to see life a little more clearly and a little more as a whole. The time is ripe for its inclusion in the curriculum of schools. That one public school has included it for many years opens the way to others. There is a combing-out process now going on, likely to be still busier in the future, which will make room for it. He who teaches it may even, unless he has very bad luck, some day find his work criticised sympathetically and with knowledge, although he may have to wait twenty-five years for this happy experience in his labours.

## TWO REPORTS ON THE TEACHING OF FRENCH.

### I.

DURING the spring and summer terms of last year inquiries were held on the teaching of French in London secondary schools by six inspectors of the Board of Education and by Mr. Cloutesley Brereton, inspector in modern languages to the London County Council. The former visited twenty-seven schools; the latter was able to draw on his intimate knowledge of all the secondary schools in London that he inspects—more than twice the number visited by the inspectors of the Board of Education.

The two reports have been in print for some time, but the London County Council has only recently sanctioned their publication. Both are of very great interest and value; Mr. Brereton, as being single-handed, is especially to be congratulated on the result of his efforts, which is in most respects equal to, and in some respects more comprehensive than, the Board of Education report. But, comparisons being odious, we do not intend to make any further comparison between the two reports; nor do we propose to consider how far the London secondary schools appear to be superior or inferior to the schools of

<sup>1</sup> Hon. Sec., Mr. W. E. Gibbard, 41 Warner Road, Hornsey, N.

<sup>2</sup> "Animal Behaviour," by the same author, will be found valuable by all who wish to know more about conduct.

some other counties as regards the teaching of French. It will be more profitable to condense statements and suggestions of general interest; and of these there are so many that the task is no easy one. The time is particularly opportune, as we may doubtless expect very shortly to receive the report of the Government Committee on the Teaching of Modern Languages.

It is gratifying to find that both reports refer to progress made in recent years:

Our conviction of the possibility of substantial advance in the near future has its surest foundation in the progress which has been effected in the recent past. (Bd. Educ., § 8.)

From a comparison of the teaching of French some ten years ago with that of to-day, it is clear that a great advance has been made. (L.C.C., p. 2.)

This is all the more satisfactory as the war has affected the modern language staffs unfavourably (Bd. Educ., § 5; L.C.C., p. 1). Among special conditions that have arisen are mentioned: reduction of the staff for reasons of economy [surely the stupidest form of economy imaginable];<sup>1</sup> masters who have joined the Army, their substitutes being less efficient [sometimes, to be sure, they are more efficient]; depletion of the upper Forms; premature promotions due to mechanical pressure from below; excessively large Forms; wartime worry and restlessness; additional domestic duties falling to girls owing to the dearth of servants.

Apart from these temporary causes, there are others which have for some time affected the teaching generally, and the teaching of modern languages more particularly.

In some schools, where the home influences are unfavourable, literary English itself is almost a foreign language to the children. (L.C.C., p. 1.)

The teacher of modern languages is often hampered by his pupils' poor command of the mother-tongue. As Mr. Brereton has judiciously said (L.C.C., pp. 8, 9):

The pupil who has had a good preliminary training in English has acquired thereby a *fund of facts, ideas, and emotions*, which supply immediate *meaning* and significance to the French words as he comes across them, while the familiarity he possesses with the more ordinary forms of the English sentence-construction and grammar helps him to understand in French those *phrases-types*, as M. Bréal calls them, which are common to the two languages. Thus, through the mother-tongue we get the *raw material* of idea, thought, and feeling without which the French words would be unintelligible, as well as the *skeleton* and *generalised* forms of those ways of expressing them into which some of the French sentences naturally fit. As time goes on, the grammatical assistance derived from

English no doubt decreases, but the importance of a rich and unbroken stream of facts and impressions from that source continues unabated until the end. The mother-tongue is not only the basis, but also the buttress of a foreign language.

Later in his report (p. 13) Mr. Brereton rightly demands closer co-operation between English and French teachers in teaching the common element in grammar (cp. also Bd. Educ., § 74). [There are a certain limited number of terms the meaning of which should be known to pupils before they begin French. The reaction against formal grammar has gone absurdly far, especially in elementary schools. The co-operation of teachers should also extend to the phonetic aspects of language; it is not uncommon to find that, in one and the same school, varying and often contradictory views as to the sounds of speech are expressed by the teachers of English, French, Latin, singing, and elocution.]

A further complication arises from the short school-life of many pupils, and the introduction of late-comers. The problems that arise from this state of things have been met in various ways (Bd. Educ., §§ 9-15; L.C.C., pp. 5, 6). [The solution appears to be:

An undertaking on the part of the parent not to withdraw his child from the secondary school before he has had at least three years' teaching subsequent to the twelfth birthday, with, perhaps, a graduated scale of fees diminishing in each additional year.

The refusal to admit pupils (a) above the age of twelve, and (b) at other times than the beginning of the school year, unless they have been educated in an efficient school.

Assignment of the pupils to Forms on the basis of a graduated entrance examination.

The postponing of the first foreign language until the age of twelve (or, at any rate, eleven *plus*), which is desirable from other points of view.]

Homogeneity of the classes is essential to good progress, and the introduction of late-comers is a disturbing factor. But even when these are left out of account, so long as French is regarded as a Form subject, the material is bound to be mixed. French does not count for much in promotion from Form to Form. It is consequently desirable to redistribute pupils, at any rate in the lower and middle Forms; and for this purpose the block-system is the most convenient. In carrying out this reclassification, it is necessary to bear in mind that only a certain proportion of the pupils stay at the school until they are sixteen (Bd. Educ., §§ 19, 27).

As regards the time to be allotted to French, the requirements as stated by the Education

<sup>1</sup> We make use of square brackets for adding comments of our own.

Reform Council (see THE SCHOOL WORLD for December, 1917, p. 402) and by the Modern Language Association (*ibid.*) are endorsed :

If regard be had to the short school-life of a large proportion of the pupils, no less provision than five lessons a week at the elementary stage, and four during the rest of the course, can be considered as adequate in the case of any school in which normal conditions obtain. (Bd. Educ., § 29; cf. L.C.C., p. 7.)

The periods should be of forty to forty-five minutes ; hour periods would not be too long in the upper Forms, but complicate the timetable. Longer periods are rarely satisfactory.

We have more than once found, in schools where temporary time-table difficulties had resulted in the allotment of two successive school periods to the French work of the same class, a teacher who had hit upon no other device for dealing with the abnormal situation than that of painfully spreading over two periods the amount of work which he would have dealt with in one if only one had been available. (Bd. Educ., § 33.)

The need for thorough organisation of the French teaching is emphasised.

The departmental system . . . has certainly come to stay, but it requires in several cases to be rendered more real and effective. It is not enough to appoint teacher head of the department. The post should involve both formal and informal conferences with the colleague or colleagues concerned, whether in the drawing up of the curriculum or in questions of method, as well as interchange of classes between the head of the department and his colleagues, for ordinary lessons, dictation, or examination purposes. There are still schools where the unity of method is by no means so complete as it ought to be, and in one or two the position of head of department is little better than titular. This is due to various causes, of which one is the failure to give the teacher in question definite time to see his colleagues at work. (L.C.C., p. 5; cf. Bd. Educ., §§ 39, 40.)

In consultation with his colleagues, the head of the department should draw up the working syllabus for the guidance of the staff, which should be set out in much greater detail than is now customary (Bd. Educ., §§ 36, 37). This may well be supplemented by a log-book in which each teacher enters week by week the ground he has actually covered; this book should be accessible to all the teachers.]

Important sections are devoted in both reports (Bd. Educ., §§ 51-55; L.C.C., p. 26) to the means of securing efficient modern language teachers. Due weight is attached to the necessity of training. Not only is a period (at least one year) of probation advocated before an appointment is made permanent, but

the candidate for a teaching post in French should be required to spend a prescribed period of training in a school where the subject is thoroughly well

taught, there to familiarise himself with the organisation of the work and the practice of class teaching, and, where suitable arrangements can be made, to gain under the close guidance of a responsible teacher some actual experience in the conduct of classes. . . . [There is a] lamentable loss of potential efficiency involved in the continued appointment of teachers destined to gain their whole practical experience at the expense of their pupils. (Bd. Educ., § 55.)

It is not enough that teachers should have adequate preparation in the way of academic teaching, a stay abroad, and professional training; they must also have opportunities of maintaining their efficiency. To this end they should receive grants enabling them to attend suitable lectures and to go abroad in the holidays; and occasionally they should be allowed a term's absence with full pay for the same purpose. Much benefit is to be derived from "observational visits" to selected schools (Bd. Educ., § 59). [This was a recommendation in the 1904 report of the University of London on modern language teaching in London secondary schools, but it does not seem to have been adopted. More recently the Board of Education made a beginning by arranging for certain young teachers of promise to visit other schools for a fortnight.]

In addition to specialists, useful work can be done by teachers of other subjects who have an adequate knowledge of French for taking junior or middle Forms. The Board of Education report does not seem to take any account of these. Mr. Brereton says (L.C.C., p. 28) :

In the larger schools by far the greater bulk of the teaching should also be in expert hands. But one does not believe even in the interests of French itself, and still less so of the curriculum as a whole, that the French teacher, where it is practicable, should teach absolutely nothing but French. It follows, therefore, that, in the larger schools at least, some intermediate Forms may be entrusted to the care of a teacher whose main subject is not French, *provided that* he possesses an adequate accent and a sufficient knowledge of the spoken and written language, and that his work and methods are carefully dovetailed into the general scheme. . . . The subsidiary teacher in French, whose main subject may be history or classics, would serve, as it were, as connective tissue between the subjects he teaches, and would thereby be instrumental in maintaining the balance and organic unity of the curriculum. Incidentally he would help to pave the way for the *interpenetration of subjects* that is so earnestly to be desired.

The "visiting teacher" of French has practically disappeared (L.C.C., p. 5). For the time being there are no *assistants* in the London schools; but it is hoped that after the war this system may be extended (Bd. Educ., § 58), especially if some slight modifications of the duties they are at present called upon to undertake were

granted by the Board of Education—a thing which constantly takes place in Scotland. They might help very well in the beginners' sets in the way of teaching accent, if care were taken to see that their methods were duly co-ordinated with those of the class teacher. (L.C.C., p. 5.)

[They might, perhaps, be allowed to take a set of beginners entirely; but to let them have a class for one or two periods a week only, for the teaching of "accent," would be an experiment of doubtful value. It might lead the teacher who takes the remaining lessons to consider himself not responsible for "accent" at all; and it would probably lead to overlapping and wasted effort.]

Turning now to questions of method, we find that, as might be expected, the attitude is one of "moderate reform." So far as the teaching in the early stages (the first two years) is concerned, the demands of the new, or direct, or reform method are, indeed, entirely conceded.

#### *Pronunciation :*

Where the pronunciation is best, it is skilfully taught on a phonetic basis at the earliest stage, confirmed by systematic sound-drill at every stage, and checked throughout, as occasion arises, by reference to the phonetic symbols with the aid of which it was acquired. (Bd. Educ., § 60.)

The L.C.C. report (p. 9) supplements this by dwelling on the value of a training in English phonetics :

The great majority of the schools make use of phonetics. In several schools the pupils receive, either beforehand in their French lessons or simultaneously in their English lessons, a training in the phonetics of English. This preliminary training in English phonetics is of great use in acquiring French sounds. In one or two schools at least the French teacher begins with a short course of English phonetics, which is most successful.

Mr. Brereton also has a note on the use of talking-machines (L.C.C., p. 10). [At present, there are, unfortunately, very few good records of normal conversational French. The value of the talking-machine is mainly as a record of intonation.]

Much stress is laid on recitation (Bd. Educ., § 63; L.C.C., p. 11) of prose and verse. [In the early stages the memorising and acting of simple dialogues are of great help in impressing intonation, as well as in teaching vocabulary and grammar. Most of the current text-books contain far too little dialogue suitable for this purpose.]

There are some excellent hints on reading aloud in class (Bd. Educ., § 64). As for chorus-work,

the practice of reading in unison, though sometimes utilised to very good purpose by a skilled teacher of

sensitive ear, is not to be recommended for indiscriminate adoption. Its obvious dangers, e.g. unnoticed abstention of the indolent and the perpetuation of confirmation of the undetected errors of individuality, were strikingly exemplified in some of the schools visited. (*Ibid.*)

[It may be added that pattern reading by the teacher in breath groups, each of them being repeated in chorus by the class, is an excellent means of imparting intonation.]

(*To be continued.*)

#### SCIENCE AND INVENTION.<sup>1</sup>

By ALAN A. CAMPBELL SWINTON, F.R.S.

WITH the appearance in history of the wonderful people the Greeks, we come for the first time in personal contact with the scientific thoughts and the scientific theories of individual philosophers. Prior to that period there must have been scientific thinkers, but we have no distinct record of what were their scientific ideas. All that remains are portions of some of their material constructions, and some accounts of others that time and decay have destroyed. Thales of Miletus, one of the seven wise men of the Grecian golden age, though he lived some 600 years before our era, is no mere name. He was the first to observe electrical action, and was the founder of the physical school of Greek philosophy, which first began to consider the nature of things. Democritus, a Greek of the fourth century B.C., we owe the earliest ideas about matter; while to Hippocrates, another early Greek, are due the beginnings of medicine and biology. To him is ascribed the immortal and pregnant phrase that while "Life is short, Art is long; Opportunity fleeting, Experiment uncertain; Judgment difficult"—an aphorism in which is summed up for all time the difficulties with which the scientific investigator has to contend. And so we pass on to that most famous of classical philosophers, Aristotle, whose writings have done more than those of any other man to influence the progress of science, and whose authority was so great that it bound the scientific world in iron fetters for centuries.

In the great library and museum which was founded in the third century B.C. by Ptolemy at Alexandria, then the intellectual and commercial capital of the Grecian world, we find the apotheosis of Greek scientific activity. Here were preserved all the scientific writings and records that a world-wide search had enabled the founder to collect. Here were taught the philosophy of Aristotle and the geometry of Euclid. Here Claudius Ptolemy experimented

<sup>1</sup> From an address entitled "Science and its Functions" delivered before the Royal Society of Arts at the opening meeting of the one hundred and sixty-fourth session, on November 21st, 1917.

optics, and wrote his great work on the construction of the heavens. Here Eratosthenes measured the earth. Here Ctesibius invented the fire-engine, and Hero the first steam-engine, which it is interesting to note as a simple form of steam turbine. Here worked Archimedes, the most famous mathematician and physicist of the ancient world, who laid the foundation of hydrostatics, elucidated the theory of the lever, and invented the burning-glass and the screw-pump which still bears his name. As a man of science the world produced no equal to him for nearly two thousand years. But the days of the great library were numbered, and within those marble halls the drip of the water-clocks of pollonius were counting drop by drop, and second by second, the approach of the catastrophe. During the siege of Alexandria by Julius Cæsar, the library and all its contents were burned—a fitting funeral pyre to the glory that was Greece.

The Romans made no contributions to pure science at all to be compared with those of the Greeks. They were a practical rather than a speculative people, and were great builders, engineers, and road-makers. Size, solidity, and quantity rather than novelty were the outstanding features of their scientific work. They were not like the Greeks, ever seeking after some new thing.

When Rome fell into decay, and the gloom of the Dark Ages settled upon Europe, there was for a time an almost complete halt in the progress of science. True, some vestige of learning still struggled to maintain itself in what was left of the Alexandrian Library, but this was finally extinguished by the latter's second destruction by order of the Arabian Khalif, Omar. After this, it is somewhat surprising that the next revival in scientific investigation took place amongst the Arabians themselves, now become a highly cultured people. To this revival we owe the invention of algebra, the beginning of systematic chemistry, and much new work in astronomy, medicine, mechanics, and metallurgy. One of the most famous of the Arabian experimental philosophers was Alhazan, who lived shortly before the Norman Conquest of England.

Of all scientific inventions perhaps the one, and a very simple one, too, that has most influenced the history of the world is that of printing. When all literature had to be laboriously copied by hand, it is obvious that books must have been scarce and expensive, and could not be widely circulated. Printing changed all that, and rendered for ever impossible the recurrence of such a disaster to civilisation as the burning of the Alexandrian Library, where, owing to there being no dupli-

cates, much of the world's knowledge was totally lost. Printing has, no doubt, recorded much more trash than wisdom, but it is difficult to appreciate what the world would be like to-day without our libraries, our books, and our newspapers. Life would certainly be very different from what it is. More important than that, however, is the enormous impetus that printing gave and still gives to the diffusion of knowledge, and the effect of this on scientific and industrial progress. When, therefore, there began in Europe that great revival of learning known as the Renaissance, it was the printing press that became its principal coadjutor, and caused things to move at a rate much faster and on a scale much larger than ever before. It was with fundamental concepts that the New Learning had first of all to contend, particularly with the geocentric theory of the universe, which gave to the earth and to human affairs quite an undue importance, and also with the authority of Aristotle, which had become an article of faith and defied all new ideas.

By the end of the sixteenth century experimental science, as opposed to the barren speculations of the schoolmen, was again being practised in Europe with noteworthy results, while, a little later, Francis Bacon published his famous "Novum Organon," and thus became the apostle of the revival of this experimental method of attacking scientific problems. On this method, which had been practically abandoned for some hundreds of years, all modern science is based, and as soon as its practice recommenced results of the highest importance began rapidly to accumulate. How a dread of the tentacles of "authority" still lingered in scientific circles is, however, to be seen in the fact that when the Royal Society was founded in 1662 the fellows took for their motto the words "Nullius in Verba," an excerpt from a line in Horace which signifies: "Not pledged to swear by the words of any master." To-day it is difficult to realise what a hold authority had come to have on even scientific ideas, and how, even so late as the seventeenth century, antiquated and frequently unsound scientific principles, as enunciated in the writings of Aristotle, were still regarded as something that had to be faced when dealing with new problems.

And now we have arrived at a period when there commenced those organised efforts in scientific investigation, and those widespread and continuous endeavours to apply the results thus obtained to practical ends, that have produced during the last two centuries such marked effects on civilisation. We have now, in fact, a better opportunity than ever before of seeing what are the functions of science.

To arrive at some measure of the vast

changes that have been brought about, let us consider how matters stood about a hundred and sixty years ago, say in 1754, the year in which our Society of Arts was founded. At that date the steam-engine had not yet assumed a practical form, and apart from some small use of water and wind power, when mechanical work had to be done this was accomplished by the aid of the muscular effort of men and animals. The question of power supply was, in fact, in the same condition that had existed for thousands of years, and, in consequence, the employment of machinery of all descriptions that required power to drive it was extremely limited. Nor as regards travel for persons, or transit for goods, were things very different. The steamship was unthought of, and ocean journeying was no faster, and but little more certain, than in the days of Columbus. Railways in the modern sense were non-existent, and even the coaching era had scarcely begun. Travelling of all sorts was no more rapid or more convenient than in the days of the Romans. Indeed, emperors such as Hadrian and Severus, who visited this country in late classical times, probably made the journey to and from Rome quite as expeditiously as, and very likely even much more comfortably than, did any traveller of the eighteenth century. Furthermore, at the time of which I speak, the communication of intelligence was limited to the speed at which postmen could travel, for, of course, there were no electric telegraphs, such as have shortened the time of communication with the ends of the earth to a few seconds, and have reduced even ambassadors to the status of clerks at the hourly beck and call of the Home Government.

In the eighteenth century, moreover, illuminating gas and electric light had still to be invented, public lighting was practically non-existent, and even in London and other large cities linkmen with torches were required to light the passenger to his home after dark. If printing was in use it was slow and expensive, without any of the modern mechanical, photographic, and other adjuncts that have rendered possible our numerous newspapers and the other derivatives of the press. Nor were there any proper systems either for water-supply or for the disposal of sewage. Disease, born of filth and neglect, stalked through the land practically unchecked. Medicine was still almost entirely empiric. Little or nothing was known of the causes and nature of illness, of infection by bacilli, or of treatment by inoculation. Anæsthetics had not yet been applied, and the marvels of modern surgery were undreamt of. It would be easy to multiply instances, but in the aggregate it is not inaccurate to state that at the time this society was founded the

general mode of life had not much improved on what obtained in civilised Europe in the days of the Antonines, while, in some respects, it fell much short of this.

To-day we live altogether in a different world, in an age of travel accelerated by steam, petrol, and electricity; of railways on the level, overhead, and in tubes; of trams and motor omnibuses, of bicycles and motor-cars; of steel ships and steel bridges; of mills and factories, with their products of every possible description; of telegraphs by wire and wireless; of telephones; of hourly newspaper editions and tape machines; of electric light indoors and outside; of electric power for every purpose, from carrying us upstairs to brushing our hair and our boots; of gas fires and gas cookers; of electric bells and electroplate; of automatic machines and thermos flasks; of pianos, pianolas, concertinas, and gramophones; of kodaks, snapshots, and kinematographs; of fountain pens, sewing-machines, typewriters, lawnmowers, knife-grinders, vacuum cleaners, and barographs; of cigarettes and lucifer matches, which are much newer than many people think; of innumerable new and cheap textile fabrics of plate glass, aluminium, indiarubber, celluloid, vulcanite, and all manner of new artificial materials; of laughing-gas for having a tooth out, of chloroform and ether for more serious operations; of X-rays for inspecting our internal organs; of dozens of new medicines for every ailment, and ailments with new names discovered every day; of balloons and aeroplanes, in which we may all soon be travelling besides all the masses of diverse machinery used in manufacture, in agriculture, and in the arts. All these things, as well as many more, are younger than our Royal Society of Arts.

It has been the fashion to divide what we understand by science into two portions, pure science and applied science; but these are only halves of one great whole. Pure science, which is the domain of the research worker and the discoverer, supplies the data, physical, chemical, and mechanical, which it is the function of applied science to turn to account for practical utilitarian purposes. For this latter operation are required the services of the inventor and the engineer, and other experts of a similar character.

Even great scientific discoveries have in some cases been made by chance, but generally only by men of marked intuition and acutely developed powers of observation. More often they have been the result of prolonged thought and of laborious and patient investigation, with delicate experiments. Many have been the issue of elaborate mathematical reasoning. As subjects become more complex, complete knowledge of what has been done before in the same

is more and more necessary. One of the most fruitful sources of new discovery in all branches of science in modern times has been the greater attention paid to quantitative as against merely qualitative research, very accurate measurements of every kind being one of the special features of present-day research methods. A noteworthy point is that the results of research are cumulative, one discovery almost invariably leading to others in course of time.

An interesting question is what manner of men they were who made our great scientific discoveries, and what were their vocations or professions in ordinary life. To go into this fully is beyond the time at my disposal, but the following information with regard to the authors of a few of our most famous discoveries is instructive, especially in view of present-day educational controversies. An outstanding feature is that many of them had no professional connection with science at all, but were amateurs pure and simple. Among these may be mentioned Robert Boyle, the famous discoverer of the law of the expansion of gases, who was a landed proprietor educated at Eton, and has been described as "the father of chemistry and brother of the Earl of Cork." Henry Cavendish, also, who discovered hydrogen and the composition of water, and did such original work in electricity, besides devising the celebrated Cavendish experiment for determining the weight of the earth, was a pure amateur, being the grandson of the second Duke of Devonshire. He was very eccentric and very rich. Sir William Herschel, the famous astronomer, was by profession an organist and a teacher of music. Priestley, who discovered oxygen, was a Presbyterian minister. Dalton, the distinguished chemist who elaborated the atomic theory, was an assistant schoolmaster. Benjamin Franklin, who with a kite drew electricity from the clouds and thus established the identity between electricity and lightning, was a self-educated printer. Benjamin Thomson, afterwards Count Rumford, who contributed considerably to the theory of heat, began life as an assistant in a store. Franklin became United States Ambassador to England, while Rumford reorganised the kingdom of Bavaria, and the air are, perhaps, the only politicians—or, in their case, one ought rather to say statesmen—who ever contributed anything of value to science. James Prescott Joule, who was the experimental founder of the great theory of the conservation of energy, and the first to determine the mechanical equivalent of heat, was likewise an amateur, being by profession a brewer.

Others were of the medical profession, as the famous Dr. Gilbert, of Colchester, physician to Queen Elizabeth, whose works on electricity and whose book, "De Magnete," are a monument to his industry and discernment. Thomas Young, the great protagonist of the luminiferous æther and of the undulatory theory of light, also was a doctor. Sir Isaac Newton, on the other hand, was a student, and afterwards a professor, of Cambridge University, and finally Master of the Mint. Sir Humphry Davy and Faraday both made their great names at the Royal Institution, where they enjoyed facilities for experiment which one would like to see greatly multiplied elsewhere. Both were of humble origin, Davy being the son of a wood-carver, who became assistant to a surgeon, and Faraday the son of a blacksmith, and a bookbinder's apprentice, who had the good fortune to attract Davy's attention and to become his assistant, and afterwards his successor. It is noteworthy that but few of these great men had the advantage of early scientific training.

The case of some of the world's greatest inventors is also interesting. James Watt began life as a mathematical instrument maker. George Stephenson was a colliery fireman who learnt reading, writing, and arithmetic only after he was grown up. Arkwright, the great inventor of cotton-spinning machinery, was a barber; Daguerre, one of the principal inventors of photography, a scene painter. Sturgeon, the inventor of the electro-magnet, was a private soldier, and carried out his earlier experiments within barrack walls. Morse, of telegraphic instrument and code fame, was a painter and sculptor; Alexander Graham Bell, the inventor of the telephone, a teacher of the deaf and dumb; David Hughes, the inventor of the type-printing telegraph and of the microphone, a professor of music; Edison, a railway newsboy, practically self-taught; William (afterwards Lord) Armstrong, the inventor of hydraulic-power distribution, and celebrated for his gun, a practising solicitor until he was thirty-five years of age.

All this goes to show that inventors are born and not made; and that, at any rate in numerous cases, genius can dispense with teaching from outside. In fact, it is not for men such as these that more education in science is wanted to-day, but rather for our masters, the politicians, the directors of public affairs, and the Government officials. It is impossible to study the history of civilisation without recognising that scientific research and invention, with their innumerable and incalculable actions and reactions, constitute the soul of industrial progress. Consequently, if this progress is to

be maintained, every inducement must be provided to encourage those who are capable of carrying on the work.

To a society such as this, whose object is the encouragement of the arts, science is mainly interesting from its pre-eminent value for purely materialistic ends, and it is, therefore, from this point of view that I have endeavoured to give some account of its functions. It must not, however, be supposed that science has not also a very high value from the ethical point of view. As Adam Smith wrote in his "Wealth of Nations" nearly a century and a half ago, "Science is the great antidote to the poison of superstition"; moreover, science is, so far as the limitations of the human intellect will permit, a search for absolute truth. Accuracy is its foundation-stone, acute observation and strict logic are its most powerful agents. These have all an educational value of the highest importance. The study of Nature and the pursuit of knowledge have, in addition, an elevating influence, and produce a breadth and a strength of mind that rise superior to material environment. This is well seen in the blameless lives of the great masters of science, and in the way that many of them sacrificed everything to their work. Some encountered persecution and even martyrdom for their ideas, and met their misfortunes with a fortitude quite equal to that shown by other men for their faith. Among the functions of science we must not, therefore, forget its moral power.

## HOW TO WRITE WITH THE LEFT HAND.

By P. B. BALLARD, M.A., D.Lit.

### III.—YOUNG LEARNERS.

**T**O teach children how to write with the left hand is one thing; to teach adults, another. We will deal with the former problem first.

As about 3 per cent. of children are left-handed, a class-teacher is liable to have one or two sinistrals under his charge. He may, of course, have none; on the other hand, he may have half a dozen. But the number is never large. Is it worth while to take these odd cases into consideration while devising a writing scheme for the class? It is. The claim of the individual child cannot be ignored: he should be given the best chance the school can afford. The first thing to do is to make sure the child is really left-handed. If there is any doubt about it a few simple tests may be applied. Give him a piece of paper and get him to make dots on it by tapping as fast as he can with a lead pencil for, say, twenty seconds, first with the right hand and

then with the left. Test also the comparative rates at which he can use his hands for placing dots inside consecutive squares on a sheet of squared paper. Note which hand produces better results. Confirm your conclusions watching him draw and play. When doubts have been removed, train him as a left-handed child.

If the general system of writing in use in the school is not suitable for the left-handed children, there should be a special modification of it for their benefit. The style of writing is ill-adapted for the left-handed if it has a definite forward slope, if it involves a marked distinction between thick and thin strokes, if it includes many up-strokes and loops, if it takes up much space, and if the joinings of the letters constitute a prominent feature. The most difficult type of writing for the left-handed is given in Fig. 7, a, and the easiest in Fig. 7, b and c.

In determining the merit of any scheme of handwriting it is generally agreed that there are three cardinal qualities which must always

*Unsuitable*

*Suitable for the left hand*

*Suitable for the left hand*

FIG. 7.

be taken into account—the facility with which it can be produced, the facility with which it can be read, and its aesthetic qualities; more briefly, speed, legibility, and beauty. People differ considerably in the relative importance they attach to these three qualities; the more practically minded ascribing the greater importance to the first two, and the more artistically minded to the last two. Legibility is included in both categories. All people agree that it is essential that what is written should be read; and the more easily it can be read the better. While only one can be concerned in writing a given script, many may be concerned in reading it. It is suggested by casual observation and proved by careful experiment that the nearer handwriting approaches print the more readable it becomes. And the reason is obvious. The printed form of the word is the one with which the eye is most familiar; for most people read a hundred times as much printed matter as written matter. Again, the characteristic features of a word upon which its recognisability

are contained in the bare skeleton—the simple essential shapes of the letters and their mutual relation to one another. Everything beyond that cumbers the page and confuses the eye. All joins and loops, all introductory strokes and final flourishes, are, from the point of view of legibility, an intrusion and an imminence. It may be, of course, that from the point of view of producibility these lines are desirable, or even necessary. Indeed, it was one time thought that they were absolutely necessary, and the type of writing in Fig. 7, a, generally known as Civil Service writing, was supposed to be writable at maximum speed. A matter of fact it has now been demonstrated that the type b can be written with equal, if not greater, speed. As for the comparative beauty of the two styles, that is a point upon which argument is idle. I can only record a strong personal preference for b and c.

The left-handed child will find in b a style of writing (here given in its extreme form) which will place him at the least possible disadvantage as compared with his right-handed school-mates. The awkward strokes are omitted; the letters being closely compacted, there is no sweeping of the hand across the page, as in the Civil Service style; the characters being based almost entirely on the circle and the upright straight line, they are just as well adapted to the anatomy of the left hand as to that of the right.

There is yet another reason why print-writing is best suited to the left-handed. It has been found experimentally that continuous writing with even pressure on the paper involves a great strain on nerve and muscle—strain that is relieved in two ways. One way is to vary the pressure by making a thick stroke occasionally (say, once per word—a rhythmic variation of pressure which is often observable in the script of rapid writers); but the better way is to lift the pen frequently from the paper—more frequently, in fact, than at the end of every word. The left-handed cannot easily adopt the former expedient: they would be well advised to adopt the latter.

The only fear which the pupil may reasonably entertain is that his writing would appear peculiar. But even this objection will probably disappear in time, for print-writing as a general scheme is being adopted in a large and increasing number of primary and secondary schools, and it is not unlikely that it will gradually supplant, or at least modify, the cursive forms now in common use. It is, of course, not necessary to leave all the letters detached. The pupil should, in fact, be encouraged to join up the letters whenever he finds it convenient. Fig. 7, c, illustrates my

meaning. Starting from this fundamental type, he will, as he gets older, develop a characteristic hand of his own which will tend towards a cursive type more legible and more beautiful than any he could have reached if he had started by imitating the ordinary cursive script.

In Fig. 8 I give two scripts, both written with the left hand by a left-handed girl of thirteen. She learnt print-writing less than a year ago; yet she can write it just as fast as the ordinary script, which she has practised ever since she was five. The two specimens reproduced were, in fact, written at precisely the same rate—forty-six letters per minute.

It is quite conceivable that either the teacher or the learner may not like print-writing, and would prefer taking up from the beginning the conventional cursive style, even though it be more difficult to acquire and to practise. In that case a round, upright hand, something

*He prayeth best, who loveth best  
All things, both great and small;  
For the dear God who loveth us,  
He made and loveth all.*

Coleridge

*He prayeth best, who loveth best  
All things, both great and small;  
For the dear God who loveth us,  
He made and loveth all.*

Coleridge

FIG. 8.—The left-handed writing of a left-handed schoolgirl.

like the second specimen in Fig. 8, would be found not unsuitable. The main things to avoid are the forward slant and the long, oblique coupling-lines.

In teaching writing to beginners in the infant school or kindergarten the nature and amount of individual attention that should be paid to the left-handed child will depend upon the general method of instruction. If that is based on sound principles little or no modification will be necessary. If it is not based on sound principles the ninety and seven right-handed will suffer as well as the three left-handed. Let us briefly, therefore, expound those principles.

In the first place, the posture of the writer should be hygienic: it should involve neither a compressing of the chest by leaning over the desk nor a twisting of the spine by sitting sideways. Chronic curvature of the spine is

a common complaint among school children, and medical officers attribute it almost entirely to faulty position in writing. If the shoulders are not level the spine is curved laterally, and if both fore-arms do not rest upon the desk almost, if not quite, as far as the elbow, one shoulder will probably be higher than the other. The left-handed child is peculiarly liable to this fault, for he often tries to overcome some of the difficulties inherent in the task of doing with the left hand what was originally designed for the right by tilting the pen towards the right shoulder. This torts not merely his hand, but his body as well. If he sits erect, with his chest square to the desk and his arms resting on it, it is so difficult to hold the pen at the wrong angle that only a very strong desire to imitate his right-handed companions will induce him to try.

If the hand is to be free from all strain there is only one angle at which the pen can be held. It is roughly indicated at *c* (Fig. 9) for the right hand, and at *a* for the left. It is possible for either hand to hold the pen as at *b*—indeed, it must do so if “copper-

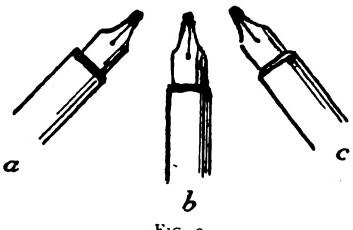


FIG. 9.

plate” writing is to be produced—but the position is not quite natural, and is not to be recommended for ordinary penmanship.

Some hygienists maintain that the only way to render impossible the acquisition of baneful habits of posture during writing is to insist upon the paper being kept square in front of the sitter. But this is a device for escaping an evil that is uncertain by running into another that is certain. For the effort to write with the paper quite straight is greater than when the paper is tilted. We have already seen that the larger movement in writing consists in the gradual change in the position of the hand from the first word in the written line to the last; the other movements are small in comparison. And this larger movement is most comfortably made by using the fore-arm as a lever revolving from the elbow, the elbow itself being moved as little as possible. Some amount of shifting of the elbow is inevitable, especially if the line is long and the arm short, for finger adjustment is in this case insufficient to convert a curvilinear movement into one that is rectilinear. As a labour-saving device, therefore, no less than

as a means of preventing manual contortion it is best to tilt the paper towards the elbow of the arm that writes.

There is, it should be mentioned, one danger back in tilting the paper: it tends to increase the slope of the writing. And the natural slope of left-handed writing is backwards. A backward slope can, however, be remedied by adjusting the angle at which the paper is tilted to suit the individual case. Not that a backward hand is necessarily bad. Its unpopularity is based on prejudice, not on principle. It has been experimentally shown that a back-hand comes next to vertical writing in its degree of legibility, and that it can be produced, even by the right-handed, with great speed.<sup>1</sup>

The second important principle to be observed in writing is that the coarser muscles should be trained before the finer—the fundamental muscles that we have in common with the brute creation before the accessory muscles that represent the later acquirements of the human race. In other words, the beginner should learn arm-writing before finger-writing. There are two reasons for this. The first is that the coarser muscles are ready for training earlier than the finer—a reason that applies to young children only. The second is that only by this order of training can ensure that the various systems of muscle involved in the act of writing work harmoniously together instead of in comparative independence—a reason that applies equally to adults. Consider what a complicated piece of mechanism the arm is. Simply and largely regarded, it is a long lever with the fulcrum at the shoulder. But not a rigid lever; it is broken in five places—at the elbow, the wrist, and the three knuckles. And each part freedom downwards can act more or less as an independent lever. But independent action is to be avoided. Writing should, as soon as possible, become a unified automatic process which is carried out almost unconsciously in obedience to a simple impulse.

This principle is almost universally observed in the modern infant school. Your children will use their fingers in writing when they have the chance; for they can use them although they cannot control them. It is therefore, not sufficient to tell them to use the whole arm; it must be made impossible for them to do anything else. When they write in large text on a blackboard, or a big piece of brown paper, with a thick piece of chalk, their hands are so small and the movement so large that they cannot to any appreciable extent bring their fingers into play. When Montessori methods are used the same prin-

<sup>1</sup> See the *Journal of Educational Psychology*, vol. vii., No. 2, p. 49.

le is observed. In tracing the outline of sets or moving the finger along a large sand-paper letter the child is training the larger muscles of his arm. In this large kind of work the young left-handed beginner feels his disadvantage much less than when he comes to deal with smaller script. His difficulties are met gradually. After the chalk the pencil; after the pencil the pen.

The pen introduces new difficulties. It is a tool which can be variously used. The fifteenth-century writers, who represent the final direction of penmanship before it was imitated and taken over by the printing press, held the pen as a wedge-shaped instrument held at a natural angle (Fig. 9, c). And it preceded writing of the style given in Fig. 10, i. In the sixteenth century writing ceased to be a vocation, and in the centuries that followed the professional penman was no longer a craftsman, but a pedagogue. He taught

*This is the old manuscript writing.*

*This is the old manuscript writing.*

*This is copperplate writing*

*This is stylus writing*

FIG. 10.

people how to write a cursive hand, and the s like print it was the better he was pleased. The pen came to be used in a new way—not merely as a tool with a rigid end, but as a tool with a fine flexible point. The thick lines were no longer made—or at least no longer exclusively made—by the angle at which the pen was held, but by pressure upon the nib. As a rule the pen was held as in Fig. 9, b, and the script appeared as in Fig. 10, ii. Neither of these styles is quite suitable for the left hand. The first is almost impossible unless some special device be used such as will be described in the next article; the second is difficult, but possible. The only kind that makes no unnatural demand upon the resources of the left hand is the third, which may be called stylus writing. The skeletal form here given may be modified in a variety of simple ways. In practice it would mean that the teacher who taught a class either of the first two styles of writing should refrain from exacting a similar script

from his left-handed pupils. The ambitious among them may be able to achieve the second style; but the teacher should be contented if they achieve the third, which, as a matter of fact, is quite as good.

(To be continued.)

#### PERSONAL PARAGRAPHS.

DR. J. B. MULLINGER, the historian of the University of Cambridge, died at Cambridge on November 22nd. Dr. Mullinger was educated at University College, London, and St. John's College, Cambridge, from which he graduated in double honours, having taken both the Classical and Moral Science Triposes. For a time he was lecturer at Bedford College, London. He then returned to Cambridge as Birkbeck lecturer on ecclesiastical history at Trinity College, and was lecturer also to the Teachers' Training Syndicate on the history of education. For many years he was librarian at St. John's College. One of the most important of his numerous books, and that for which he will probably be remembered longest, is the history of the University of Cambridge down to the decline of the Platonists. In conjunction with the late Dr. S. R. Gardiner, Dr. Mullinger published an introduction to English history, and with Canon Masterman a treatise on the age of Milton. Dr. Mullinger travelled abroad a great deal and had made a fine collection of photographs of the architectural features of the countries he visited. His manner was precise and marked by an old-world courtesy. His death has made a gap in the Historical School at Cambridge which it will be difficult to fill.

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THE death is announced of Mr. Frank Ritchie, since 1904 secretary to the Common Entrance Examinations for public schools. Mr. Ritchie was a prominent member of the Preparatory Schools Association and of the College of Preceptors, to both of which bodies he gave his whole-hearted support. In recent years he served on the Selection Committee of the Admiralty dealing with the selection of candidates for Osborne. Among his many other educational activities was that of examiner in Latin for the College of Preceptors.

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THE death is announced of the Rev. H. L. Brereton, Rector of Little Massingham, Norfolk. He was the son of the late Prebendary Brereton, himself one of the pioneers in the development of secondary education. Mr. Brereton was educated at the Norfolk County School and Cavendish College, Cambridge, both of which were founded by his father.

From 1887 to 1891 he was headmaster of the Gloucester County School, and in 1896 he became senior master of the North-Eastern County School at Barnard Castle. Upon his father's death in 1901 he succeeded him as Rector of Little Massingham, where he continued to interest himself in education.

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MR. W. W. HEWETT, at one time of Field House, Rottingdean, Brighton, a preparatory school at which Admiral Jellicoe was once a pupil, died in September last at the age of seventy-seven and left estate to the net value of £65,000. Subject to legacies of £500 each to the executors, he left all his property in trust for his sister for life, and on her death, among other bequests, £2,000 to Corpus Christi College, Cambridge.

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THE Holt School has suffered a great loss by the death in action on November 5th of Mr. Percy J. Auger, the senior French master. Mr. Auger had been in charge of the Modern Language Department of the school since its opening. He volunteered for active service on the outbreak of the war, and joined the Liverpool Scottish as a private. He acted for some time as a dispatch rider, and was killed in the recent advance on Passchendaele. The headmaster of Holt School, Mr. C. W. Bailey, in communicating the sad news to the school said that Mr. Auger had given many years of his life to the promotion of a good understanding between his country and France. He was more than a teacher of French, he was a leader in the Entente Cordiale between the two peoples. He had been a lecturer at Lille University, and was a master of arts in French of Liverpool University. He was a teacher of rare sympathy, a simple, knight-like man, full of courtesy and kindness. In a recent letter home he had said: "I feel quite prepared to make the supreme sacrifice, should it be God's will. Never have I been more convinced of the righteousness of our cause, and I shall count myself honoured to die for England's sake."

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THE Governors of the Kingsbridge Grammar School have appointed Mr. P. H. Wykes as headmaster in the place of the Rev. W. Watson, who recently resigned the position upon accepting a vicarage near Exeter. Mr. Wykes was educated at the Wrexham County School and at Balliol College, Oxford. Upon leaving Oxford, Mr. Wykes was appointed senior mathematics master at Loughborough Grammar School. After four years he was appointed to the staff of the Bradford Grammar School, where he has remained until appointed

to Kingsbridge. Mr. Wykes was a member of the Executive of the Assistant-masters' Association and a member of its Education Sub-committee.

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THE Assistant-masters' Association is again suffering from the loss of its honorary secretary. Mr. Blades has had to give up his work for the association on account of ill-health. When at Watford as a colleague of Mr. G. Dunkerley he began to work energetically on behalf of the association, and interested himself particularly in the question of salaries. He is the last of a list, now becoming long, of men whose health has broken down in the service of the association.

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THE Senate of Cambridge University has decided to mark the second visit of the N.U.T. to Cambridge at Easter next by bestowing three honorary degrees of M.A. on prominent members of the union. The members chosen are Mr. G. E. Hamilton, Mr. Underdown, and Mr. Flavell. Mr. Hamilton has been prominent in the councils of the union almost since its inception in 1870. He was treasurer by annual election from 1884 to 1916. Hamilton House is named after him, and a medallion bust of him has recently been placed in the council chamber of the union. He is one of the honorary members of the union. Mr. Underdown is the president of the union until Easter next. He began his year of office as an assistant-teacher, but has now been appointed headmaster of a large school in Bristol. He represented the assistant-teachers on the Teachers Registration Council until he was disqualified by his recent appointment. He is also a member of the Departmental Committee on Salaries. Mr. Flavell is headmaster of a large primary school in Birmingham. He has the longest record of service on the Executive of the union of any man who has not already received an honorary degree.

\* \* \*

MISS C. F. STOCK, M.A. in Honours of St Andrews, senior history and English mistress at Princess Helena School, Ealing, has been appointed headmistress of the Guildford High School for Girls in succession to Miss Millie Simmons. Miss Simmons was educated in Germany, at University College, Aberystwyth, and at the Cambridge Training College. For nearly two years before going to Guildford she was a mistress at St. James's, West Merton.

\* \* \*

MR. W. M. CAREY, second master of the Rutlish School, Merton, has been awarded the Distinguished Service Medal of the Royal Life

ving Society in recognition of the valuable work he has done in encouraging proficiency swimming among schoolboys. This much-vetted honour has been given only twice in the whole British Empire since 1914, and Mr. Carey's many friends will join in congratulating him on a well-served honour. During the fourteen years in which Mr. Carey has directed the swimming activities of Rutlish School his aim has been to produce a large number of good all-round swimmers rather than a few racing experts, and encourage the older boys to become instructors and inspectors of swimming and life-saving classes. Since 1910 the life-saving classes at the school, with one exception, have been drilled and instructed by boy teachers; and since 1913 fifteen boys have won the Amateur Teachers' Certificate of the Southern Counties Amateur Swimming Association. The Rutlish School swimming records show that during the last ten years the school has gained 384 awards of the Royal Life-saving Society, including nine Awards of Merit (silver medals). During the past season Rutlish School received honourable mention in the competition for the 100-guinea "Darnell" Excellence Trophy of the Royal Life-saving Society, open to all schools and colleges in the British Isles; and the school now holds the championship shield, the senior team cup, the living shield, and the life-saving shield of the Surrey Secondary Schools' Swimming Association.

ONLOOKER.

## CONSIDERED SUGGESTIONS FOR EDUCATIONAL REFORM.

### PROS AND CONS.

#### II.

THE memoranda put forth by bodies concerned with education summarising their policy are so numerous that most of us can scarcely keep count of them, much less digest them. Excerpts from some seventeen recent expressions of opinion, arranged under heads and presented with notes from Mr. Fisher's Bill and other sources, may interest readers of THE SCHOOL WORLD.

In the hope of promoting peace, points have been selected showing our unhappy divisions rather than those on which all of us are agreed. *Du choc des opinions jaillit la lumière.* There is no hope for education until political quarrels yield to the benefit of the children.

The reports fall naturally into three groups:—

(1) Those of purely professional bodies, whose members see more of the results of the

present educational system than outsiders, and whose suggested remedies vary as much as theirs.

(2) Those of officials, whose one idea is organisation. "Uniformity must tire at last, though it is a uniformity of excellence," said Johnson.

(3) Those of educationists and associations such as the W.E.A., whose views must be respected, even if they are contrary to logic.

It is not necessary to say anything here about the Bill. Every excerpt is a direct or indirect comment on it. The success of the Bill depends upon the supply of teachers required to carry out its provisions. On this point criticism will be found under the heading "Teachers" (xviii). Finally, nothing will put our educational machinery in order until someone arises who will break down Nehushtan and rear a structure from the tower of preparatory education to the fenced cities of the universities. Now is the appointed time. Where is the prophet?

Our extracts, as a rule copied verbatim, in two or three cases condensed, have been taken from the following sources:—

- (1) Assistant-masters' Association. "Educational Policy." (I.A.M.)
- (2) Board of Education Report. (Brd. of Ed.)
- (3) Civil Service Examinations Report. (C.S.Exx.)
- (4) Directors and Secretaries for Education. "Towards an Education Policy." (Assoc. of D. and S.)
- (5) Domestic Subjects, Memorandum of Teachers of. (Mem. T. of D. Sub.)
- (6) Education Committees. Report of Executive. (Ed. C. Assoc.)
- (7) Education Officers' Association Policy. (Assoc. Ed. Offs.)
- (8) Education Reform Council Report. (Ed. R.C.R.)
- (9) Mr. Fisher's Bill. (F.'s Bill.)
- (10) Headmasters' Association. "Educational Policy." (I.A.H.M.)
- (11) Headmistresses' Conference. (Hd. Mistr.)
- (12) British Science Guild. "National Education." (B.S.G.)
- (13) Teachers' Registration Council. "Resolutions." (T.R.C.)
- (14) Technical Institutions Association. (Assoc. T.I.)
- (15) The Round Table (June). "Education of the Citizen." (R.T.)
- (16) University of London. "Memorandum." (Univ. of Lond.)
- (17) Workers' Educational Association. (W.E.A.)

The memoranda are referred to in brackets under the abbreviated titles, and have been analysed under the headings given below:—

- (i) Administration; (ii) character training; (iii) children under school age; (iv) Civil Service examinations; (v) continuation schools; (vi) curriculum; (vii) education in schools; (viii) examinations; (ix) finance; (x) general; (xi) governing bodies; (xii) health, care of;

(xiii) inspection; (xiv) L.E.A.s; (xv) organisation of schools; (xvi) scholarships; (xvii) secondary schools; (xviii) teachers: training, salary; (xix) teaching; (xx) university education.

(xi) GOVERNING BODIES.<sup>1</sup>

(1) Greater emphasis should be laid on the value of governing bodies even in the case of schools directly under the L.E.A. . . . The number of schools the governing bodies of which contain *bona-fide* representatives of universities might be increased with advantage. (I.A.H.M.)

(2) That the governing body shall include a substantial number of representatives of the learned and scientific societies, and that members of the governing body shall not hold office for life. (Univ. of Lond.)

A good governing body is a treasure to a school. Such bodies must not be browbeaten by the L.E.A. or neglected by the Board of Education, which is too apt to pander to the more powerful authority. On the other hand, governing bodies must learn to look on the head of the school as a person worthy of as much consideration as they expect for themselves.

(xii) CARE OF HEALTH.

(1) Increased attention should be given by L.E.A.s to medical treatment and physical training, and the supervision of this work should remain with the Board of Education. (Assoc. of D. and S.)

(2) That L.E.A.s should have power to conduct medical inspection and to give medical treatment in secondary schools maintained by the L.E.A.s, and in all aided schools in which satisfactory provision in this respect is not made. (Assoc. Ed. Offs.)

(3) All schools should be medically inspected at least once a year by a school medical officer, who should be in close touch with the head of the school, and through him with the parents. (I.A.H.M.)

(4) (We desire) the provision of conveyances to and from school in outlying districts where children have more than one mile to walk. (W.E.A.)

(5) All schools (including public and private secondary and preparatory schools) should be medically inspected by a public authority. (Ed. R.C.R.)

(6) Part ii. authorities shall have power to make provision for the medical inspection and treatment of pupils in their secondary, continuation, and other schools. (F.'s Bill.)

(7) That we regret the permissive character of most of the clauses dealing with the promotion of physical well-being. (W.E.A., N.W. Branch. Resolutions on the Bill.)

The W.E.A. deplores the permissive character of the Bill in this and other cases. Permission will be of no avail when an authority is unwilling to improve.

(xiii) INSPECTION.

(1) Inspectors should have had at least ten years' experience of secondary teaching. (I.A.A.M.)

(2) Of the seven great public schools, with 3800

pupils between them, two—Harrow and Rugby—had been inspected and pronounced efficient by the Board. Of 110 conference schools, with about 35,000 pupils thirty-six, with 11,000 pupils, had been inspected and approved by the Board; thirty-four schools, with 17,000 wards of 10,000, received grants; of the balance twenty-seven schools, with 13,000 pupils, were neither inspected nor in receipt of grants. (Earl of Crawford in the House of Lords.)

(3) Schools which are recognised as efficient by the Board, and the efficiency of which is assured by the Board's inspection, should not be required for the purpose to submit to inspection by any other body or authority. (I.A.H.M.)

The worst of it is that one set of inspectors might pronounce a school efficient, another set condemn it as inefficient, while a third might disagree with large parts of the report of the other two bodies. Dislike of inspectors is, no doubt, inimical to recruiting for the schoolmaster's profession. An idea abroad that a master's reputation is too much at the mercy of a man really unqualified to judge work done in a school. Quite naturally, a sensible man will not plunge into a profession the difficulties of which are evident to any inquirer and the rewards inadequate.

(xiv) LOCAL EDUCATION AUTHORITIES.

(1) The teaching profession should be adequately represented on all bodies which control or administer education. (I.A.A.M.)

(2) Schemes of L.E.A.s should deal only with the local provision of education. Public schools and other non-local institutions receiving no assistance from the authority should remain outside their scheme. (Assoc. of D. and S.)

(3) L.E.A.s are too chary of applying the principle of devolution. (I.A.H.M.)

(4) In all educational administration and in the conduct of public examinations fuller use should be made of the services of teachers actually engaged in school work. (T.R.C.)

Until the nation sends better men to serve on councils and supports them, the L.E.A.s will remain what they are, and the blame will rest on the apathetic citizen who will not take his share in public affairs. At present the doctrinaire, the official craving for uniformity and the indolence of parents are robbing children of their inheritance. No national scheme of education can be complete that does not deal with all schools, private and public alike.

(xv) ORGANISATION OF SCHOOLS.

(1) The teaching of domestic subjects should be made compulsory for all girls in elementary, secondary, and continuation schools. (Mem. T. of D. Sub.)

(2) Manual training and domestic science should become at once a considerable part of the ordinary curriculum of every school and not be considered extraneous. . . . In secondary schools there should be an increase of science teaching. . . . (Ed. C. Assoc.)

<sup>1</sup> Sections (i) to (x) were published in our December, 1917, issue (vol. xix., p. 2414).

3) The time for transference from elementary to secondary or technical education should be determined by standard rather than by age. Some pupils will reach the necessary standard at ten and a half to eleven, others at eleven and a half to twelve. In general transfer should not be postponed beyond the twelfth year. (I.A.A.M.)

4) The transference from elementary to secondary schools should take place between the ages of eleven and twelve. . . . In secondary schools, including endowed and public schools, pupils should remain as a rule until the end of the term in which the seventeenth birthday occurs. Financial provision should be made to enable suitable pupils to remain at school until they enter the university.

Encouragement should be given to the formation of "intermediate" or "practical" classes (or schools) for children whose intelligence is not successfully developed by the ordinary school curricula and methods. (Ed. C.R.).

5) No class in an elementary school should consist more than forty children; each class should similarly have its own room and should be in charge of a qualified teacher. (Assoc. of D. and S.)

6) Every secondary school should be so equipped to be able to provide for the education of pupils up to the age of eighteen in all branches of the curriculum. (A.A.M.)

7) The head of every school should have the general control of the internal organisation, including the choice of books, the methods of teaching, and the arrangement of school hours. (I.A.H.M.)

8) Literary, linguistic, mathematical, and scientific studies should be regarded as fundamental branches of knowledge, and each pupil should receive some instruction in all these branches. These subjects should, as a rule, be continued (beyond sixteen), and public and secondary schools should not undertake specialised training in professional subjects. Opportunities for learning Greek and Latin should be given in one or more schools in every educational area. While it is desirable that it should be compulsory on all pupils, some form of artistic and manual training is to be regarded as of very high importance. (Univ. of Lond.)

9) That the decimal system should be adopted universally for money, weights, and measures. (Assoc. Ed. Offs.)

Much depends on the age of entry into a secondary school. France has two "preparatory years," and in the "elementary division" no classes, before we reach the lowest class of the "premier cycle" of four years, followed by the "second cycle" of three years, leading to the "baccalauréat" at eighteen to nineteen years. So we may put the age of entry at about eight. In Germany the age of admission into a secondary school is eight to nine. Switzerland allows boys of nine to ten to enter a secondary school.

To keep pace with Europe, England must not delay secondary education beyond the age fixed on the Continent.

#### (xvi) SCHOLARSHIPS.

(1) An increase in the amount of contribution made from public funds is needed for scholarships (boarding and otherwise), free places, and maintenance grants. . . . There should be made a more equitable distribution of these throughout the country. . . . Transference to other schools should be arranged for. . . . There should be scholarships open to all, without restriction as to the original place of education. No scholarship tenable at a day-school should cover more than the expenses of education, books, and travelling. (I.A.H.M.)

(2) The 25 per cent. free-place system is illogical in principle and unsatisfactory in practice. (Ed. R.C.R.)

(3) It is desirable that there should be a large increase in scholarships and maintenance grants tenable at technical schools and colleges by pupils from primary and other schools. (Assoc. T.I.)

(4) University scholarships should be less specialised than at present. (I.A.A.M.)

(5) Power is given to an L.E.A. to make arrangements for the provision of board and lodging to enable children to receive the benefit of efficient elementary education—with the approval of the Board. (F.'s Bill.)

It is unfortunate that the present system of confining free places to candidates from elementary schools is continued. The system is good neither for education nor for economy. It encourages parents to batten on the State, and snubs people who are willing to pay their way and to be independent. A little more of the *Liberté, Egalité, Fraternité* spirit in English politicians would teach them that the only fair claim on the State for free education must rest on the amount of the parents' income. The conditions under which free places are now offered lend themselves to great abuse.

#### (xvii) SECONDARY SCHOOLS.

(1) The council supports the principle of abolishing fees in secondary schools for the maintenance of which an L.E.A. is responsible, and also the principle of a due number of free places in secondary schools which are partly maintained by State grants. (T.R.C.)

(2) That the number of full-time day-schools of varied types providing education higher than elementary should be largely increased. (Assoc. Ed. Offs.)

(3) Adequate provision should be made for secondary education of a technical character for boys and girls between twelve and sixteen, in addition to secondary education which is mainly "literary" or "classical."

Where the provision is at present inadequate, L.E.A.s should establish secondary schools of a high educational type, preparing for the universities and the professions. (B.S.G.)

(4) Continued secondary education from age sixteen to eighteen should be preparatory to (a) university education, or (b) business or professions.

No institution should be permitted to receive pupils below the age of sixteen years, unless it has been recognised as efficient for the purpose by the Ministry of Education. (I.A.A.M.)

(5) We wish to bring private educational institutions into closer and more convenient relation to the national system. . . . I fear that not a few private-venture schools are frauds on the public. The teaching is deplorable; the buildings are inappropriate; there is no adequate security for the health and progress of the pupils. (Mr. Fisher in the House of Commons.)

Secondary education will always be hampered by the influx from elementary schools of children living in uncultured homes, unless they are transferred at an early age—earlier than children from preparatory schools. A free democracy cannot afford to deprive its little ones of even a year of higher education. The numbers in elementary schools must be lessened by direct encouragement to parents, as regards fees, to send their children early to secondary schools. For the benefit of poorer children, too, Parliament must insist on "advanced courses" being established. As appears at present, the Board allows advanced courses only in a few schools, and is far from encouraging as many schools as are willing to help boys to gain "those treasures of the mind, that source of pure enjoyment," of which Mr. Fisher so eloquently speaks, and so to travel on the broad highway to the university.

#### (xviii) TEACHERS : TRAINING, SALARY.

(1) A complete revision and substantial improvement of the scale of salaries should be made at an early date in order to attract to the schools suitable men and women. Pensions should be provided on the Civil Service scale. Half-measures, such as verbal persuasion and doles towards the training of those who do not feel any bent towards the work, are ineffective. (Ed. R.C.R.)

(2) The minimum-salary scale for teachers in boys' schools should include a commencing salary of not less than £150, rising automatically by annual increments of £15 to at least £450. The minimum scale should be uniform throughout the country, with allowances for teachers living where the cost of living is relatively high. (I.A.A.M.)

(3) In order to secure an adequate supply of trained elementary-school teachers, it will be necessary substantially to raise salaries. (Assoc. of D. and S.)

(4) The present grave crisis in the supply of teachers is not to be met by a system of doles to parents in the shape of maintenance grants to children during school life conditional on a pledge to enter the teaching profession, but by making the teaching profession desirable in respect of salaries, prospects of advancement, and pensions. (I.A.H.M.)

(5) No system of training teachers can, however, be of any avail, unless the conditions of subsequent service are such as to attract students of the right type. (Mem. T. of D. Sub.)

(6) Reforms outlined in Mr. Fisher's Bill require some 4,000 men teachers to restore merely the old normal conditions. The extension of school age until

fourteen means 5,000 more; if extension to fifteen encouraged, an additional 2,500 may be needed; continuation schools may eventually demand 35,000 teachers; nursery schools may have to be staffed with 25,000 teachers. (Mr. Crook, *Times Educ. Sup.* August, 1916.)

(7) Sir James Yoxall, M.P., general secretary of the National Union of Teachers, speaking at Beverley announced that it had been decided that in districts where the local county and education authorities were not paying adequate salaries to teachers the union would give financial assistance in removing the teachers to better-paid districts.

He predicted that in fifteen years there would be a famine in teachers. To maintain the number of teachers required for the existing classes, 30,000 recruits to the profession would be needed annually whereas he did not believe there were 12,000.

(8) That, in view of the heavily increased demand for teachers which will follow upon the raising of the school-leaving age and establishment of continuation schools, we strongly urge that immediate steps be taken to increase the supply of competent teachers . . . That we deplore the omission from the Bill any limitation upon the size of classes. (W.E. N.W. Branch. Resolutions on the Bill.)

There is only one solution to this difficulty—schoilmasters and schoolmistresses must be given attractive salaries paid by the State. It is quite useless for highly paid officials to talk about the nobility of the teaching profession in the hope of catching more innocents.

The supply of masters in secondary schools has not been equal to the demand for some years. Nor will the recent action of the Board create confidence among hesitating aspirants. The Board regards teachers' salaries as the primary object to which the new grant should be applied, and leaves the application of it to the authorities. As a result of this weak policy, some schools spend the whole grant on salaries, and began doing so last July; in other schools the whole staff may fare well in the future; in yet other schools a part of the staff will benefit to a small extent sooner or later. The uncertainty of prospects thus demonstrated deters many a man from "taking to teaching."

#### (xix) TEACHING.

(1) In schools of all types it is necessary to provide against the classes being too large to permit of the individual care which is indispensable to physical, moral, and mental development. (T.R.C.)

(2) A greater number of teachers in proportion to the number of pupils is required. (Hd. Mistr.)

(3) In trade schools, technical schools, and continuation schools there would seem to be a distinct advantage in adapting the teaching to local needs. (Ed. C. Assoc.)

(4) The imparting of the technical elements of a trade is not in itself an education. (I.A.H.M.)

(5) That all teachers should possess some certificate of general education, together with a teaching certificate; such education, as well as the training leading to a certificate, should vary to suit varying types of schools. (Assoc. Ed. Offs.)

(6) Much has yet to be learnt, however, before the factors of mental development are fully understood, and methods of instruction based upon them can be formulated. (B.S.G.)

One sometimes wonders whether what we call education is really anything better than the acquisition of information, and whether intellect is actually trained or merely grows naturally. An educated genius is only superior (if superior) to the uneducated genius by his store of information, so far as brains are concerned.

(7) The maximum teaching hours should in no case exceed twenty a week, other duties two—or five in boarding-schools. The performance of extra duties should carry extra pay. (I.A.A.M.)

And yet unfortunate secondary-school masters who may labour in school twenty-eight hours weekly and spend an hour or more daily in correcting home-work are encouraged by education authorities to devote several hours each week to teaching in evening classes. Worst of all, they are often obliged to undertake this work to support their wives and families. Thus the nation rewards those who undertake pastoral duties.

#### (xx) UNIVERSITY EDUCATION.

(1) That the conditions for admission to universities should be reconsidered and rendered more uniform as between different universities, and less uniform as between different faculties and honour schools in the same university, and that, in the interest of candidates of mature age and non-school candidates, university entrance tests should be distinguished from secondary-school examinations. (Assoc. T.I.)

(2) There should be more intimate connection between universities and schools, considerable increase in facilities enabling students of ability to proceed to universities who cannot afford to do so at their own expense, greater provision for research work of all kinds, fuller recognition of the relation of universities to the vital industries of the country. The fact of having passed a suitable certificate examination should be sufficient proof of fitness for admission to a university, irrespective of the particular subjects endorsed on the certificate. (I.A.H.M.)

(3) The selection of students for scholarships to the universities and institutions for higher education should be based upon an expert review of the relevant qualifications rather than upon a central competitive examination. Such relevant qualifications are: the school record, examination record, probable career, general personal fitness. (Ed. R.C.R.)

(4) Further encouragement should be given (by more liberal grants) to the development of higher technological training and research. Tutorial classes involv-

ing regular attendance for a period of at least three years should be supported. Provision should be made for highly qualified students from these classes to proceed as full-time students to the universities or to attend special university courses in the evenings or in the summer. (B.S.G.)

(5) No boy should be admitted to a university under the age of eighteen. (Assoc. T.I.)

(6) Any scholarship to be held at a university awarded to a girl candidate under the age of eighteen should be held over until the candidate reaches that age. (Hd. Mistr.)

(7) Oxford and Cambridge should confer degrees on women "graduates." (Hd. Mistr.)

Amid the cries for giving scholarships on "general attainments" (whatever that may mean), there are voices calling for greater knowledge of subjects and more research. There is, in fact, a conflict between those striving for higher education and those striving for broader education. Both parties have good intentions, but neither party must be allowed to triumph over the other. The difficulty is complicated by the fact that boys go to Oxford and Cambridge, in some cases, quite up to degree standard, in others up to no standard at all.

The general standard of admission to the older Universities sorely needs to be raised.

### THE MOST NOTABLE SCHOOL BOOKS OF 1917.

THE compilation of the following short list of books published during 1917 has been entrusted to experienced teachers familiar with the needs of schools.

The compilers have had a free hand, and attention has not been confined to books reviewed in these columns.

When the character of the volumes is not indicated sufficiently by the titles, a few explanatory notes have been added.

In some subjects the number of notable books is too small to justify separate lists, but we shall include the few books which deserve mention in our lists of next year.

#### Classics.

"The Fragments of Sophocles." Edited, with additional notes from the papers of Sir R. C. Jebb and W. E. Headlam, by A. C. Pearson. Three vols. (Cambridge University Press.) 45s. net.

"M. Annæi Lucani De Bello Civili. Liber viii." Edited by J. P. Postgate. (Cambridge University Press.) 3s. net.

"Homer: Odyssey i.-xii." Second edition. (Oxford Classical Texts.) (Oxford University Press.) 2s. 6d., 3s., 5s. 6d.

"Æneas at the Site of Rome." Observations on "Æneid," Book viii. By W. Warde Fowler. (Blackwell.) 4s. 6d. net.

"The Original Element in Plautus." By K. M. Westaway. (Cambridge University Press.) 2s. 6d. net.

"Cicero: Pro Lege Manilia." Edited by A. C. Clark and C. E. Freeman. (Clarendon Press.) 2s. 6d.

"A Greek Reader for Schools." Edited by C. E. Freeman and W. D. Lowe. (Clarendon Press.) 2s. 6d.

"Perse Latin Plays." Second edition. By R. B. Appleton. (Cambridge: Heffer.) 1s. 6d.

"Selected Letters of Cicero." By H. M. Poteat. (Harrap.) 2s. 6d. net.

"Secondus Annus." By C. L. Mainwaring and W. L. Paine. (Clarendon Press.) 2s. 6d.

#### **English Language: Grammar and Composition.**

"English Grammar: Descriptive and Historical." By T. G. Tucker and R. S. Wallace. (Cambridge University Press.) 3s.

Scholarly, sensible, and of reasonable length.

"English Prose Extracts for Repetition." By E. H. Blakenev. (Blackie.) 8d.

"A First Book of English Prose for Repetition." By J. H. Fowler. (Macmillan.) 9d.

Two excellent selections, which would supplement each other. They should help the pupil in learning how to write.

"First Course of English Phonetics." By H. E. Palmer. (Heffer.) 2s. 6d. net.

A very useful elementary book, with valuable exercises.

"An English Pronouncing Dictionary on Strictly Phonetic Principles." By Daniel Jones. (Dent.) 6s. net.

An important work: valuable on both the scientific side and the practical.

"The Rudiments of Criticism." By E. A. G. Lamborn. (Clarendon Press.) 2s. 6d. net.

A simple introduction to the study of poetry, which the English teacher should find worth reading.

#### **History.**

"An Analytical Outline of English History." By W. E. Haigh. (Oxford University Press.) 3s. 6d. net.

"Pages of Britain's Story." (Selections from sources A.D. 597-1898.) By J. Turrell. (Clarendon Press.) 2s. 6d. net.

"British Foreign Policy in Europe to the End of the Nineteenth Century." By H. E. Egerton. (Macmillan.) 6s. net.

"The Old Empire and the New." By A. P. Newton. (Dent.) 2s. 6d. net.

"Outlines of Medieval History." By C. W. P. Orton. (Cambridge University Press.) 10s. 6d. net.

"Notebook of Mediæval History." By C. R. Beazley. (Clarendon Press.) 3s. net.

"The Later Middle Ages: 1254-1494 A.D." By R. B. Mowat. (Clarendon Press.) 4s. 6d.

"Political and Social History of Modern Europe," Vol. i., 1500-1815. 8s. 6d. net. Vol. ii., 1815-1915. 10s. net. By C. J. H. Hayes. (New York: The Macmillan Co.)

"The Expansion of Europe." By Ramsay Muir. (Constable.) 6s. net.

"History of Commerce and Industry." By C. Herrick. (New York: The Macmillan Co.) 7s. net.

"France." By W. H. Hudson. (Harrap.) 10s. net.

"Spain." By David Hannay. (Jack.) 3s. 6d. net.

"Portugal." By G. Young. (Clarendon Press.) 5s. net.

"Italy." By E. M. Jamison and others. (Clarendon Press.) 6s. 6d. net.

"The Teaching of History." By C. H. Jarvis. (Clarendon Press.) 4s. 6d. net.

#### **Chemistry.**

"Chemists' Year Book." By F. W. Atack. (Manchester: Sherratt and Hughes.) Two vols. 10s. 6d.

An invaluable annual, much enlarged; indispensable in the laboratory.

"Synthetic Dyestuffs." By J. C. Cain and T. Thorpe. Third edition. (Griffin.) 16s. net.

A standard work, embracing many practical laboratory preparations.

"A Text-book of Inorganic Chemistry." Edited by J. N. Friend. Vol. iv. (Griffin.) 15s.

Deals with aluminium and its congeners in a comprehensive manner.

"Manufacturing and Industrial Chemistry." By G. Martin. (Crosby Lockwood.) 25s.

Deals with the inorganic side of manufacturing chemistry, and gives a broad survey of all the diverse operations met with in this great industry. Will be found useful in correcting erroneous impressions obtained from the text-books.

"The Theory and Use of Indicators." By E. B. Prideaux. (Constable.) 12s. 6d. net.

Up-to-date exposition of current theories.

"A Text-book of Thermo-Chemistry and Thermodynamics." By Otto Sackur. (Macmillan.) 12s.

For the teacher who desires to keep in touch with his subject.

"Chemical Discovery and Invention in the Twentieth Century." By W. A. Tilden. (Routledge.) 7s. 6d. net.

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The best text-book on this subject for upper forms and scholarship classes.

"Standard Methods of Chemical Analysis." By W. W. Scott. (Crosby Lockwood.) 30s.

Useful for reference.

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A manual with a strong leaning to the physical side of the science.

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"A Text-book of Physics." Edited by A. W. Dutt. Fourth edition. (Churchill.) 10s. 6d. net.

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Electrical Laboratory Course, for Junior Students." By J. Maclean. (Blackie.) 2s. net.

The Electron: its Isolation and Measurement, and Determination of some of its Properties." By Prof. A. Millikan. (Cambridge University Press.) 1.5s. net.

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Name This Flower." By Gaston Bonnier. (Dent.) net.

A simple illustrated key for the identification of non flowering plants and ferns. Invaluable to students of botany.

Nature-study Lessons Seasonally Arranged." By J. B. Philip. (Cambridge University Press.) 1d. net.

Studies of well-selected plant types.

A Handbook of Nature-study for the Primary Schools of Burma." By E. Thompson. (Longmans.) 4s. 6d. net.

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A desirable book for the botanical reference library. Good illustrations and keys for identification.

The Vegetable Garden." By Ed. J. S. Layard's Class Book Series. (Macmillan.) 1s. 6d.

The Cultivation of Allotments." By Percy Elford Samuel Heaton. (Clarendon Press.) 8d. net.

Food Gardening for Beginners and Experts." By Valentine Davis. (Bell.) 6d. net.

Three useful Guides to the patriotic utilisation of school gardens.

How to Collect and Dry Flowering Plants and Seeds." By H. S. Thompson. (Routledge.) 7d. net. All of practical hints.

The Study of Animal Life." By J. Arthur Thomson. (Murray.) 6s. net.

A revised edition of a deservedly popular book.

culars of which can be obtained from Mr. F. Fairman at 9 Brunswick Square, London W.C.1.

THE annual general meeting of the Historical Association will be held on January 11th and 12th at University College, Gower Street, London. The annual address will be delivered at 5.30 p.m. on the first day by Sir Paul Vinogradoff on "Troubled Times in Russian History." At 10.30 a.m. on the second day papers will be read on "The Effect of the War on the Teaching of History," by Prof. Paul Mantoux, Miss Noakes, and Mr. S. M. Toyne.

THE annual meetings of the Geographical Association will be held on January 5th and 7th at the London Day Training College and King's College, London. The presidential address will be delivered by Sir W. M. Ramsay on "The Great Goddess, Mother Earth," on the second day at 5 p.m. at King's College.

THE Army Council has made some alterations in the regulations for admission to Sandhurst, Woolwich, and Quetta. The elementary mathematics paper is to be increased by an additional arithmetic paper, in which all candidates must make 75 per cent. of the marks. In like manner a trigonometry paper is to be added to the intermediate mathematics, and in this 50 per cent. must be gained by all candidates. The 2,000 marks for English history and geography were formerly divided as to 1,400 for history and 600 for geography; they are now to be 1,200 for history and 800 for geography. An oral examination is to be restored to French, but a note says that, "in the event of an oral examination being impossible, the whole of the marks will be allotted to the written paper." Considering that a majority of our officers are fighting in France, and that there is no deficiency of French examiners, it might have been thought that more importance would have been given to French. It would have made for greater smoothness of working between the two Allied Armies. A practical examination is to be restored to science, with the same proviso as for the French oral. We think that both candidates and their teachers have a grievance against the War Office for springing these alterations upon them just three months before an examination. Candidates take twelve to eighteen months over their special preparation for Army tests, and to have the syllabus altered just before they are going up must make a difference, although to the layman it might appear as if it were fair for all. A year ought to be the least notice allowed. Another point that should be altered is the difference between the War Office and the Admiralty as to reckoning the ages of candidates. For the March examination, candidates for the Army have to be seventeen and a half on March 1st, but for the special entry to the Navy they have to be seventeen and a half on December 1st previous. If there is a reason for the naval officer to be three months older we should be very glad to know it.

ON December 1st Mr. Cloudesley Brereton gave a lecture on "The French Child at School" to the Anglo-French Society. Mr. Brereton said that the child has been less studied in France than in England and America. In spite of Rousseau, the child

The sixth annual conference of Educational Associations is being held this year from January 2nd to 12th at University College, Gower Street, London. Mr. John D. McClure will open the proceedings at 10 a.m. on January 2nd with an address. More than forty associations are holding meetings, full parti-

is a late discovery in France. There is a lack of juvenile literature in France. The absence of nurseries is one cause. The French child grows up with grown-ups. The French child is a town mouse, the English a country mouse. Each is a typical product of Latin and Northern culture respectively; one rather naive and spontaneous, the other self-conscious in the good sense. The family has, in France, an extreme importance; the Frenchman espouses, not a wife, but a clan. The French child receives a social education; hence most of it is given outside the school, and hence it is a common mistake to look in the French school for certain things that are naturally given inside the English school. The English parent desires a foster-parent in the schoolmaster. The French parent prefers doing his own fostering. The French teacher, therefore, lays stress on instruction rather than on education. The French stress the æsthetic and intellectual side of education, the English stress the moral. French education is not without its faults—it tends to be too grown up. The moral for us is that English parents must learn to grow up with their children. Full particulars of the Anglo-French Society can be obtained from the honorary secretary, at 8 St. Martin's Place, London, W.C.2.

LADY BARRETT opened the London Garden School at Hampstead on November 30th. The new school is a branch of Leinster House School, Hyde Park. Hampstead is the pioneer of the play-garden methods of education for young children, but this new school takes children above as well as below twelve years of age. For the younger children there is a Montessori class. The principals' ideals include the development of the individual along the line of least resistance. Cultivation of whatever powers are latent in the whole body is to be fostered by every expedient. On the subject of the open-air life Lady Barrett said that all children should spend as many hours as possible in the open air. It is as important to their well-being as food and warm clothes. Little children should have their daily rest in the open air, and all children should take exercise out of doors. Miss de Normann also spoke, and traced the progress in educational methods from the board school, where facts were "injected" into the young child, to the new era introduced by Mme. Montessori, Prof. Dewey, and Mr. Edmond Holmes. Among the "peculiarities" of the school are natural, instead of arbitrary, rewards and punishments—there are no marks and no examinations, hence no harmful competition. There is no home-work, but any original work done by the children on their own initiative is accepted; there is complete rest and silence for a period after the midday dinner, followed by quiet handwork, accompanied by reading aloud. Work done by the pupils was on view at the opening, and consisted of interesting specimens of regional survey, stitchery, Boole curves as applied to mathematics, drawings, and so on.

THE annual report of the City of Bradford Education Committee for the year ended July 31st, 1917, is a very good example of what such reports should be, especially in respect of completeness and breadth of

view. A report which is a mere routine collecting statistics is no doubt important enough in its way, but a report which also shows, by means of brief descriptions and explanations, how our national vision for education "works out" in a definite concrete instance is more important, and vastly more interesting. And this is what the Bradford report essays to do. Among the many points which would be worthy of mention, did space permit, we may refer to some thoughtful schemes, prepared by the head-teachers of elementary schools, for the training of student teachers, along with some reasonable criticism of those schemes. We note, too, with relief, though not with surprise, that the number of entrants to the teaching profession, notwithstanding a substantial increase in the remuneration of student teachers and bursars, shows a considerable falling off. Human touch is added to the Bradford report in places where one—for example, in recording honours gained by teachers and by old pupils, whether in or in the arts of peace.

WE have received a copy of the official report of the proceedings relating to the dismissal from their posts of Prof. Cattell and Asst.-Prof. Dana, of Columbia University. The former, in spite of formal warning, had sent a letter, written on the official notepaper of the University, asking certain members of the House of Representatives "to support a measure against sending conscripts to fight in Europe against our will," and the latter had used his influence and reputation as a university teacher, in connection with an organisation called the People's Council, in a calculated to weaken the Government in the presentation of the war. President Butler put the matter before the Senate when he said:—"So long as national policies were left to debate we gave complete freedom, as is our wont, as becomes a university—freedom of assembly, freedom of speech, and freedom of publication—to all members of the University who in lawful and decent ways might wish to inform and to guide public opinion. Wrongheadedness and folly we might deplore, but we were bound to tolerate. So soon, however, as the nation spoke by the Congress and by the President in declaring that it would volunteer as one man for protection and defence of civil liberty and self-government, conditions sharply changed. What had been tolerable before became intolerable now. What had been wrongheadedness was now sedition. What had been folly was now treason."

THE Indian Bureau of Education has just issued one of a series of occasional reports, a report on the methods of school inspection in England, by Mr. H. J. Wyatt, an inspector of schools in India. We can easily imagine that, though the analogy between the Indian school system and our own is by no means close, this report will be of great value to Indian teachers and administrators. But we think it will also prove most interesting from the English point of view, well, for though there are many scattered references to the subject in different reports, we do not remember seeing it comprehensively treated before. Mr. Wyatt begins with an "historical note," in which he traces the growth of the inspectorate from its tentative beginn-

1840 down to the present time. In subsequent chapters he deals with qualifications and training for school inspection, inspecting procedure in elementary schools, the co-ordination of different branches of the inspectorate, reports and inquiries, and the inspection of secondary schools. The condition of education is to a considerable extent reflected in the spirit and method of inspection—a fact which makes Mr. Wyatt's useful monograph one of general interest to teachers and officials.

From a review of the official publication, "Indian Population in the United States and Alaska, 1910," in *Eugenics Review* for October, we learn that the United States Government has made considerable progress in the education of the children of full-blooded Indians and half-breeds. From 1877 to 1910 the expenditure on education was multiplied 187 times, while the total amount appropriated for all Indian affairs has only increased threefold. More than a quarter of the whole grant is now devoted to the schools. During the same period the number of schools has risen from 150 to 389, and the enrolment has increased from 3,500 to more than 30,000. The proportion of attendance to enrolment has steadily increased. Indian children between the ages of ten and fourteen go more frequently to school than negro children of the same ages, and between fifteen and nineteen 48 per cent. of the Indians attend school, a higher proportion than among the white or negro elements of the population. This educational enterprise extends to inhospitable Alaska, with its scattered nomad population.

WOMEN teachers from the United Kingdom are invited to volunteer for service as teachers for country schools in Western Canada. This invitation is urged as a means of bringing great influence to bear upon the large numbers of foreign emigrants who need to be assimilated into the rapidly growing population. Trained certificated teachers may begin teaching at once. Girls whose education has reached the standard of the Senior Locals may enter a normal school for ten or twelve weeks' course of instruction for a third-class certificate, with which they may obtain a permit to teach for one year. The permit is renewable by the recommendation of the Government school inspector. Salaries commence at £120 per annum, and the arrangements are very satisfactory. Full particulars as to the cost of the journey, bursaries, and travelling arrangements can be obtained from the offices of the British Women's Emigration Association, the Imperial Institute, London, S.W.7.

SCALES of salaries for teachers are undergoing improvements in various localities. In Queensland, for example, a new scale of salaries for teachers in public schools has been adopted as a result of arbitration. A friendly conference of the departmental heads and representatives of the executive of the Queensland Teachers' Union was presided over by the Minister for Public Instruction. After much discussion an agreement was reached. The Queensland Cabinet and the Teachers' Executive concurred in the agreement. As consequence of the intervention of other bodies of public servants an Order in Council was promulgated disqualifying any public servant in receipt of £300 per

annum or more from the operations of the Arbitration Act. The net result, says the *Queensland Educational Journal*, of the whole process, which has occupied attention from May to August, is that an approximate increase of 25 per cent. has been obtained on the teachers' salaries, and that a male classified teacher may reach the salary of £300 per annum at the age of thirty-four. Other matters, such as allowances for the increased cost of living in remote districts, are still under consideration.

MUSEUMS are usually regarded as places to be visited by the individual. Only on rare occasions can a schoolmaster take his class to a museum for a special visit to meet a special need. Curators habitually regard the objects of their care as too precious to leave the museum. An article, "The American Museum and Education in Science," by Provost W. H. Carpenter, of Columbia University, in the September issue of the *Columbia University Quarterly*, says that the American Museum in New York has broken with this tradition. Many years ago cabinets containing teaching collections of insects, etc., were deposited in the public schools, and for some years now the museum has adopted the plan of circulating Nature-study collections, which are put up in portable boxes, with handles, delivered to schools, and called for by museum messengers. For the benefit of teachers and classes studying in the museum the services of trained demonstrators are provided. Lantern-slides in thousands are available for loan to teachers. Folios illustrating the source, means of transmission, and prevention of contagious diseases are also circulated.

MESSRS. WORKMAN AND CRACKNELL, of Kingswood School, Bath, direct our attention to the proofs of Euclid III., 21 and 22, which they published in 1904 in their "Geometry, Theoretical and Practical." These proofs are substantially the same as those suggested by Mr. Cecil Hawkins in our issue of last month to avoid the unsoundness of the usual proofs. Mr. Hawkins tells us that he had not seen Messrs. Workman and Cracknell's proofs, or he would not have desired the publication of those he had arrived at independently.

#### SCOTTISH.

MR. MUNRO introduced the Education (Scotland) Bill in the House of Commons on December 17th, and it was read a first time. The main object of the measure is to effect a further improvement in the provisions of education for all classes of the population and to make that provision available to residents in remote and isolated districts. It is proposed to raise the age for full-time school attendance from fourteen to fifteen, and to make attendance at continuation classes obligatory upon pupils between the ages of fifteen and eighteen who are not in full-time attendance in school; to restrict employment both before and after school hours of children attending school, and to regulate still further the employment of children or young persons under the age of fifteen in factories and in mines. Provision is further made to ensure that so far as is practicable no child or young person who has promise or ability shall be debarred by reason of difficulty of access or want of means from full opportunity for the

development of his faculties by attendance at secondary schools or universities. It is proposed that the unit of educational organisation shall be wider, corresponding generally with the county, or in certain cases a combination of counties. It is provided that the local education authority in the county shall be an enlarged committee nominated by the county council. State-aid will be proportionate to the expenditure incurred, a higher proportion being given to those districts where the expense of making a reasonable provision for education imposes a disproportionately heavy burden upon the locality. Denominational schools providing elementary education will be compulsorily transferred to the local education authority, and will be managed in all respects as public schools, but provision will be made for religious instruction according to the views of the former managers, given by qualified teachers acceptable to representatives of those managers, both as regards faith and character. As there is a large volume of opinion in Scotland which favours the setting up of a body representative of universities, local authorities, teachers, and others interested in education, as a forum for the discussion of educational questions, provision is made for the constitution of an Advisory Council, designed to assist the Minister and the Department in framing educational proposals.

THE report of the Departmental Committee on the Salaries of Scottish Teachers is one of the most important documents that have been issued in recent years. Though appointed several months later than the corresponding English Committee, the Scottish Committee has presented a unanimous report, while the other is still deliberating. It will be exceedingly interesting to compare, when available, the findings of the two Committees. The report explains the principles that guided the Committee in framing its scale of minimum salaries. The former are well worth further study, as they mark a remarkable advance in the appreciation of the teacher's value to the community. The limits of salary for men assistants range from £100 to £220 for non-graduate men, and from £120 to £250 for graduate men. For non-graduate women the range is from £80 to £160, and for graduates from £90 to £200. First assistants may rise £50 higher. For headmasters the salaries laid down range, in the case of schools with more than 250 in attendance, from £300 to £550. In smaller schools the upper limit is £250, plus a house. In secondary schools ordinary graduates range from £120 to £270 for men, and £90 to £220 for women, while honours graduates go from £140 to £300 for men, and from £120 to £250 for women. Principal teachers in such schools have a maximum higher than the ordinary assistants by from £50 to £150. Headmasters of secondary schools will go from £450 to £550 in the smaller schools, and may rise to £1,000 in the highest grade of secondary schools. The heartiest thanks of the teachers of Scotland are due to Sir Henry Craik and the members of his Committee for their enlightened appreciation of the teachers' position. The Committee was representative of every shade of opinion and of every educational interest, and it is a triumph of good sense to have arrived at a unanimous finding. No doubt the un-

rivalled authority and experience of Sir Henry were important factors in the result.

SIR EDWARD PARROTT, M.P., in addressing the Edinburgh Branch of the Educational Institute, said every shade of educational opinion was agreed on questions such as larger areas, co-ordination of grades of education from the primary school to university, improved conditions of service for teachers and the establishment of a National Education Council. He advocated the holding of conferences between teachers and school authorities in order to thrash out details in these and other questions, and to give a lead to the nation in regard to them. Sir Edward had a solution to offer in regard to the vexed question of voluntary schools. These are at present a black hole in the national system, but everyone is afraid to touch a question which has raised such feeling across the Border.

THE annual meeting of the Historical Association of Scotland was held in the University, Glasgow, where Prof. Medley, the president, delivered an address on the movement for furthering the study of Colonial and Imperial history in Scotland. He suggested that in the meantime the best way to secure this was to establish lectureships in the subject in the Scottish universities for a limited number of years. The lecturer in each case should be a man with first-hand knowledge of some particular part of our great Dominions. It should be part of his duty to give popular lectures over the district in which the university was situated and put his knowledge at the disposal of all who were interested. In this way, in the course of years, the lecturer would get into touch with the conditions and needs of all our possessions across the seas. The secretary's report showed that a great deal of useful work bearing upon the causes, issues, and aims of the present great struggle had been accomplished by the association during the past year.

THE Educational Institute of Scotland, consequent upon its union with the Association of Secondary-school and Class Teachers, resolved at its annual meeting in September that two new full-time officials should be appointed, one as organising secretary, the other as editor of the professional journal, and remitted it to the council to make the appointments. The council of the institute at its December meeting elected Mr. George C. Pringle, rector of Peebles High School, as organising secretary, and Mr. Thomas Henderson, editor of the *Journal*. Mr. Pringle, in connection with the Secondary Education Association, has had precisely the experience necessary for the new post. Twenty years ago he found the Secondary-school Teachers' Association dying of inanition. He revived it, and made it a strong and effective body. He then brought about a union between this association and that of the Higher Grade Teachers, and finally led the united body into the greater union of to-day. In all this progress Mr. Pringle has been the master spirit, and his new appointment may be regarded as a guarantee for the harmonious and effective working of the many diverse elements in the new institute. Mr. Henderson is a younger man, but he has already won his spurs as a

er. He has a trenchant pen, a lively wit, and an *net* for "good copy." He has a hard task before him, but he will arrive.

#### IRISH.

DISTRIBUTION for Ireland has given rise to a demand for the representation in Parliament of the new universities—that is, of the National University and of Queen's University, Belfast. The claim is based upon grounds: first, representation is being given to newer English universities, and, secondly, Dublin University has already two members. Under the Bill which was introduced into Parliament no change was made, no instructions having been given to the Redistribution Commissioners; but as this Bill has been dropped and the two Irish Parliamentary parties have agreed to work out a new Bill with the Speaker as chairman, the question will be raised again, and the Committee will have to deal with it. Queen's University has 3,800 students on its roll. The National University has a larger number. One thing is laid down in regard to Irish representation. The number of representatives must not be more than 103, and any increase in university members must come within this limit.

CREASED grants for technical instruction have been demanded during the past month. The situation is a serious one. Large opportunities are opened for Ireland for industrial and commercial development by the extension of tillage, but, on the other hand, there is, in the present circumstances, no possibility of wider facilities, and there is the greatest difficulty in maintaining the existing schemes. They are severely hampered by want of funds. Even before the war the salaries possible with the limited sums at disposal of the technical committees were not high enough to attract efficient instructors. Since the war teachers have reasonably been granted bonuses, to be paid out of economies in other directions. Expenses have therefore had to be cut down instead of being expanded to meet new technical needs. Mr. Ballinger has made it plain that no money can be forthcoming for technical instruction from the equivalent fund, which is already earmarked for primary and secondary education. The scheme for secondary education is not yet published, but is expected very shortly.

ANOTHER direction in which money is required is for continuing continuation schools. In the city of Dublin such schools are absolutely necessary to bring pupils to the required level for entrance into the technical schools, and owing to the failure to secure the small amounts available under the Board of National Education some of the classes have been suspended, and a public appeal is being made for funds to pay the fees of the teachers. Mr. Ryan, the hon. secretary, has issued a pamphlet containing some very remarkable figures concerning the existing evening elementary schools in the island. In 1905 there were 631 such schools, in 1915 only 301. The Parliamentary vote in 1905–6 for such schools was £23,000 (of which only £11,928 was used); in 1914–15 it was only £8,000 (of which £7,900 was used). There is a Compulsory Attendance Act

(1892) for Ireland, under which 232 school attendance committees existed in 1914—ninety-two in county boroughs, urban districts, and municipal towns, and 140 in rural districts—and of these 229 enforced the provisions of the Act, but there are forty-one urban districts or towns and 112 rural districts which have no school attendance committees. Further, in the city of Dublin at the end of 1914 there were 17,281 boys on the rolls of the national schools, distributed as follows: 12,771 in Standards I. and II., and 4,510 in Standards III. to VIII. Presumably 8,000 boys leave every year without advancing beyond the second standard, while more than 10,000 did not make 150 days' attendance. From this it is clear that compulsory attendance, both at school and at continuation classes, is absolutely essential in the interest of the country.

THE Department of Agriculture and Technical Instruction announces that a limited number of scholarships and teacherships in training will be offered for competition in 1918. The examinations will be held from June 25th to 28th, and all applications for admission to the examination must be made before May 11th. The Department also proposes to hold a special examination for teachers' qualifications in manual training (woodwork), if a sufficient number of candidates come forward. Candidates must be above twenty-one, and must apply not later than June 1st. It is proposed to hold the examination on June 11th and 12th.

#### WELSH.

MR. JOHN BALLINGER, lecturing before the Cardiff Naturalists' Society, urged that the National Library should collect all the works of Welsh men and women in all ages, works in all the languages allied to Welsh, and books on all subjects in all languages both for purposes of study and to give Welsh people all the advantages provided by national libraries in other countries. The plans provided accommodation for about two million books. Handsome contributions have been made by local authorities and by means of a miners' levy.

MISS TALBOT, of Margam Abbey, has given £30,000 to found a chair of preventive medicine in Cardiff University College.

MR. J. W. ROBERTS, of Hale, Cheshire, who died on October 12th, has left £2,500 to Aberystwyth College to found a scholarship in memory of his father, Alderman J. F. Roberts, Lord Mayor of Manchester in 1897.

A CONFERENCE was held in October to consider proposals for developing and co-ordinating technological education and research in South Wales and Monmouthshire. It was proposed that the education authorities and business men should be represented in equal numbers, with an independent chairman. Exception was taken to the proposal that the chairman should be appointed by the University, and it was decided that this should not be pressed.

THE scheme for a National Council of Education still hangs fire. The proposals of the Executive Committee of the Llandrindod Conference were sent to the local authorities with a request for a reply during

October, but they are still under discussion. If anything wrecks the project it will be the difficulty of adjusting the proportions of the representation to be granted to the rural districts on one side and to the industrial districts and large towns on the other. The representatives of the latter are experiencing considerable difficulty in securing the consent of their constituents to the concessions to the sparsely peopled areas that were proposed at the conference. Added to this is the strongly expressed feeling that it would be a loss to Wales to be cut off from England in educational matters, and that there is little more to be said in favour of a National Council for Wales than there is for any of the other proposed provincial councils—to which considerable exception has been taken in many parts of the country. This view, again, is denounced as "anti-Welsh," and the educational question is merged in the political one—as usual.

THE establishment of advanced courses in secondary schools, with special grants to support them, is arousing adverse comment, not from any hostility to the scheme in itself, but because the eight schools selected have no monopoly of the good work that has already been done without special equipment or reward. The remedy lies in the extension of the system at the earliest opportunity. There are many schools where one or two pupils have, with much labour and under great disadvantages, been trained for careers in which they have distinguished themselves; but at present the Board of Education confines its help to schools which can provide classes of a reasonable size.

TEACHERS' salaries are going up appreciably, in spite of the delays and the unsatisfactory method in the allocation of the Fisher grants. The Rhondda elementary-school teachers are allying themselves with the trade-unions, and pointing out in the Press that many of their number are paid worse than scavengers. Secondary-school teachers also are preparing action on an increasing scale in case conciliatory measures fail; in one borough the secondary-school teachers have sent in their notices, and been asked to withdraw them in view of a conference with the Education Committee; and indications clearly point to the possibility of extensions of this policy.

#### BOOKS FOR TEACHERS OF HISTORY.

- (1) *History: the Quarterly Journal of the Historical Association.* No. 7. (Macmillan.) 1s. net.
- (2) *The Teaching of History.* By C. H. Jarvis. 240 pp. (Oxford: Clarendon Press.) 4s. 6d. net.
- (3) *France: the Nation and its Development.* By W. H. Hudson. xxiv+631 pp. (Harrap.) 10s. 6d. net.
- (4) *The History of Napoleon Buonaparte.* By J. G. Lockhart. xx+539 pp. (Oxford University Press.) 2s. net.
- (5) *In Analytical Outline of English History.* By W. E. Haigh. xvi+332 pp. (Oxford University Press.) 3s. 6d. net.
- (6) *Bolingbroke's Letters on the Spirit of Patriotism and on the Idea of a Patriot King.* Edited, with an Introduction, by A. Hassall. xxiv+141 pp. (Clarendon Press.) 2s. 6d. net.
- (7) *Bibliography of Mediaeval History, A.D. 400-1500.*

By Miss B. A. Lees. 48 pp. (Historical Association.) 22 Russell Square, W.C.1.) Free to members others 1s. 6d. net.

(8) *Wall Atlas of European History.* A series of twenty-four large-scale maps. (W. and A. K.ston.) 5s. net each.

(9) *History of Commerce and Industry.* By C. A. Wickham. xxvi+552 pp. (New York: The Macmillan Company.) 7s. net.

(1) This number of *History* is unusually interesting. It begins with a long and important article by C. H. Firth on "The Expulsion of the Long Parliament." Not only does this article throw new light on the confused and critical events of 1653, it also provides a model of what historical research should be. Another striking feature of this issue is the opening of a series of notes—under the title "Historical Revisions"—which are sure to be much appreciated by busy teachers. The notes are intended to summarise the results of recent research in cases where such research has materially modified old-established theories. The first of the notes is by Prof. A. F. Pollard; it treats of the Magna Carta, and exposes the falsity of such legends as that which attributed the jury system to the Charter. The second of the notes is by Mr. G. Callendar Osborne, and its subject is "The Real Significance of the Armada."

(2) Dr. Jarvis, of the Leeds Training College, in writing this handbook for teachers, has endeavoured to deal simply and clearly with the problems which often perplex those who have had no definite historical training and do not specialise in history teaching. He tries to answer such questions as: Why should we teach history in schools? What parts should we select for our scheme? What method of instruction shall we adopt? His replies to these and similar inquiries are based on wide experience, extensive reading, and individual thought. A careful examination of various views concerning the purpose of history teaching results in the general conclusion that the main aim is "to help the child towards understanding the world of human activity in which he lives." In order to achieve this purpose Dr. Jarvis considers that the content of the history scheme should be:—(1) The history of England; (2) with special stress in late school years on recent periods; (3) not forgetting the development of the Empire; and (4) not neglecting aids which history may afford. The history of Europe and of the world at large, he holds, can be brought into the scheme only incidentally. As to the form of the scheme, he advocates a judicious combination of the concentric and the periodic method of presentation. On this basis he gives a detailed statement of the subject-matter of historical courses for each of the eight normal years of school life. He concludes by discussing the place to be accorded to oral teaching, illustrations, and practical work. The book as a whole deserves the careful consideration of teachers. It is illuminating and helpful.

(3) It is impossible to desire a more attractive introduction to the history of France than that here provided by Prof. Hudson. It is written with that admirable lucidity and masterly arrangement for which the author is justly noted; it is adorned by over eighty delightful and really illuminative illustrations; it contains necessary maps and genealogical tables; it is printed on good paper and well bound. The story begins with Gaul before the coming of the Franks, and it ends with the founding of the Third Republic in 1870. The whole of the narrative is informed by one leading motive, viz. the development of that democratic idea which became dominant at the Revolution and triumphant on the fall of Napoleon III. This motif gives unity to the long and varied story, but (if I

in may be ventured) it tends to throw the Middle into a false perspective; it tends to present all priests and kings as mere obstructions. They something better than that, even if they were not at Messrs. Belloc and Chesterton make them have been. For modern times, however, the ratic motive is the true key. We have here a reprint of a famous book published in 1829. Its author was editor *Quarterly Review* at the time, and the son-in-law Sir Walter Scott, who himself had recently come to light, especially in the form of memoirs state papers. Hence in countless details Lockhart's narrative needs correction. Some corrections made in the present edition by Dr. Holland Rose, contributes a valuable introduction. But it I have been an advantage to have a full appa- of historical notes, such as Dr. Rose could so have furnished. Even in the absence of these, Lockhart's "Napoleon" retains a real value, depicts and impresses the characters of the main in the European tragedy of a hundred years in such a way as to make them living and vivid. excellently printed and well-bound reprint is a el of cheapness.

This is an extremely careful and very sug- analysis of English history for the use gents and teachers. It is intended to be employed njunction with text-books, in order to give coher- and meaning to their information. Mr. Haigh five main evolutionary movements in English ry, and he has tried to display all the events in successive periods of the history so as to illustrate interpret them. These five movements are: first, l; secondly, social and economic; thirdly, reli-; fourthly, political; fifthly, constitutional. The ng of these five lines of development gives a con- to our national story which makes it more ving to the reason than is the usual straggling ative. Within the successive periods (ten in num- into which Mr. Haigh divides English history, gives a clear and accurate summary of important ts. This alone suffices to make the book valuable to students who have to prepare for examinations to lecturers who have to arrange their materials history lessons.

Bolingbroke was one of the most bril- and enigmatic characters of the eighteenth ry. His influence long outlasted his life. was strongly felt by Burke; it did much to old Disraeli. Bolingbroke in his day was one of most pungent critics of party government and one is most strenuous opponents in the world of prac- l politics. Hence his writings have a more than mon interest to-day, when once again the party tem is discredited and the substitution of a national n of government advocated. The two short works ich Mr. Hassall has edited and introduced contain Bolingbroke's reasoned reflections on party and patriot- l. They are full of wise considerations as relevant the affairs of to-day as they were to the affairs the reign of George II. Mr. Hassall's preface useful and enlightening. Not many people, how- er, will agree that Bolingbroke "had as much poli- al wisdom" as Burke, even if they admit that he d "twice as much political daring."

(7) This bibliography, No. 44 of the Historical ssociation's leaflets, is one of the fullest and

most exhaustive of the series to which it belongs. It gives under classified headings remarkably complete information respecting original sources and secondary authorities for every period of the Middle Ages. For the medieval specialist it will be an invaluable companion and guide. A few omissions of recent works suggest, however, that Miss Lees has not consulted the lately issued second edition of Gross's great book on the source of early English history. If she had done so she could scarcely have failed, as she has done, to make some mention of Mr. Kingsford's editions of the London Chronicles and the Croyland Chronicle.

(8) These maps are "designed to show at a glance the chief political changes and national movements from the formation of the Roman Empire to the beginning of the Great War, 1914." Their size is 40 in. by 30 in. The leading territorial arrangements at the respective dates to which they refer are marked by bold and attractive colouring. Physical features are indicated unobtrusively but effectively. Place-names are printed in clear and legible type. The series will be a valuable adjunct to the teaching resources of every lecturer on European history. Full details concerning the maps, and particu- lars respecting their presentation in the form of wall atlases (at a slight reduction of cost), can be obtained from the publishers at St. Andrew Square, Edinburgh.

(9) This scholarly and important work is much more than a history of commerce and industry. It is a survey of human evolution from the economic point of view, and as such it deserves the serious consideration of many who would have but little interest in the study of so materialistic a subject as mercantile development. It begins with a careful definition of the economic point of view. Then it proceeds chronologically to treat of the commercial and industrial phenomena of the early civilisations of the Nile and Tigris-Euphrates valleys, and so on to the present day. The narrative is well illustrated with maps, plans, and pictures. Each section, moreover, gives copious references for supplementary reading. Students whose attention has hitherto been concentrated on political history will find their horizon considerably enlarged by this able survey of the old facts from the new position.

#### REFORMED CLASSICAL WORK.

*Our Renaissance: Essays on the Reform and Re- vival of Classical Studies.* By Henry Browne. xvi+ 281 pp. (Longmans.) 7s. 6d. net.

We confess to some disappointment in this book, due, no doubt, to wrong anticipations aroused by the sub-title. Those who take it up in the expectation of finding a comprehensive survey and appreciation of all sides of reformed classical work are bound to be disappointed on finding that Prof. Browne is concerned primarily, if not entirely, with the increasing use which classical teachers are making—and, in our opinion, rightly making—of archæological aids to the study of Latin and Greek. Its deficiencies as a general survey may be gauged, for example, by the allocation of only one page (in which we are told nothing) to the reform in the methods of teaching which we are all now coming to understand by the direct method. Nor is this all; Prof. Browne's interests, even within the limited sphere of archæology, are almost entirely confined to numismatics, and although we feel strongly that archæological aids should be used more in schools, we think that Prof. Browne falls into the enthusiast's error of allotting too much significance to them—in this Sir Frederic Kenyon, who contributes a preface, would seem to countenance our view—and maybe he is wrong,

in spite of the strong practical advantages for teaching purposes which spring from the convenient size and comparative wealth of coins which we possess, in allotting primary significance to numismatics within that sphere. We must, however, be fair to him—over and over again he tells us that he is not advocating the replacing of a sound education in the literature by a smattering of archaeological knowledge; he wants teachers to use coins (and other archaeological aids) simply to help the pupil to realise that the Greeks and Romans were human beings, who once lived on this earth just as we are living on it to-day. But the fact remains that, in this book, we find little else (beyond this use of "archaeological aids") to characterise the "reform and revival of classical studies."

The book consists of two parts—"The Voice of Hellas" and "The Classical Revival"—of which we think the first the more valuable. Prof. Browne writes pleasantly and fluently, with occasional descents, it is true, to the popular, but this is due to the fact that the book is largely made up of addresses delivered on different occasions to different societies. His most valuable point—in his first part—seems to us to be the insistence upon the wrongness of the idea that the Greeks were an "aesthetic" people—in the derogatory sense of the word. He reminds us of Plato's objections to aestheticism, finds "patriotism" to be the thought-impulse of Homer, and, in fact, describes aestheticism as, not the strength, but the ruin, of Greece.

The book ends with the suggestion that our great public museums should combine more with classical teachers in the work of education, and there is an appendix dealing with the replies received from a variety of sources upon definite questions put in this connection.

## RECENT SCHOOL BOOKS AND APPARATUS.

### English.

*The Australasian Shakespeare. Merchant of Venice*, 114 pp. *King Lear*, 182 pp. *Macbeth*, 104 pp. *As You Like It*, 172 pp. Various editors. (Melbourne: Lothian Book Co.)—The outstanding features of this well-printed, well-edited set of plays are the careful expurgation (extending occasionally to the alteration of a line or a phrase) and the fresh and breezy introductions and notes. No English edition excels this for its type and clearness of set-out. We hope the battle over expurgation has been won; you cannot read an untouched Shakespeare in the schools; but there remains, and always will remain, a good deal for the editor to do in the way of introduction. And if we disagree with the editor's view of Jaques, we are unfeignedly glad to see some sort of explanation—though still inadequate—given of Lady Macbeth. As to "Lear," we shall never know the inner bitterness that prompted it and "Timon," but it is at least useful that prefaces should cease to portray the Still Lion as one apart from all human passion and despair. Probably Tolstoi's comparison of man with a river, now foul, now clear, now deep, now shallow, will one day be attended to by our psychologists. It is a commonplace to say that Shakespeare was Lear and Jaques and Lady Macbeth and Touchstone; but it is quite another thing to hammer it in and to try to explain him and ourselves by understanding it. This edition deserves a welcome.

*Australia in Peace and War*. By W. M. Fleming. 154 pp. (Melbourne: Lothian Book Co.)—These lays of the Bush and the rolling plains make admirable reading. Perhaps they are not always inspired by the Parnassian spirit, but the human and virile spirit

runs through all, and the romance of the open of the wool sales, of the stockman and the th country and the love of woman. It is a clear fine collection of stirring verses.

*Word-Book of the English Tongue*. By C. 216 pp. (Routledge.) 1s. 6d.—Glossaries and synonymy books require to be constantly rewritten, and this is but a hint of what might be done. The compiler is jealous for our English words, and he takes a single word and sets over against it its equivalents in other languages. An instance will show the reader the plan. Under "Ewe" we read, "Hale, healthy, sound, whole-hearted, broken, utter, thorough(going), unhampered." In "C. L. D." would, in a later edition, add the English metaphors that may be said to go with the "entire," the value of the book would be increased. As it stands, however, the book is a most interesting attempt.

### Geography.

*The Pupils' Class-Book of Geography*. By E. Lay. Maps and diagrams. *Scotland*. 96 pp. *Asia*. 128 pp. 8d. (Macmillan.)—These are interesting and useful books. Noteworthy features are the wealth of maps and diagrams, the lists of searching questions, and the sets of "things to do." A notable criticism lies in the mention of place-names to which no fact is attached; such names are useless information. Mr. Lay's treatment of the westerly winds and drifts in the Atlantic is sound, but that of the monsoon can hardly be improved; why not call the north-east wind a trade wind and not a monsoon? The pupil will soon understand from the text the reason why Assam is rainy and Sind is arid.

### Mathematics.

*A First Course in Higher Algebra*. By H. A. Hill and C. E. Smith. xiv+247 pp. (The Macmillan Co.) 6s. 6d. net.—The scope of this work is wider than the title suggests, for it includes chapters which form an introduction to the differential and integral calculus. At the same time, it is strictly a first course in the sense that in treating the various topics fundamental principles are discussed and no attempt is made to enter upon more specialised and difficult developments. The work thus differs considerably from the usual text-books, which assume all the readers to be specialists, and it should appeal to a considerable number of persons who desire to obtain a general view of the principles involved in higher algebraical analysis. At the same time it will be found useful for those students who are looking forward to supplementing this first course by more detailed study. Within the limits which the writers have imposed upon themselves the treatment may be regarded as adequate. The first example given in illustration of the definition of a limit is not very happy selected. There is no obvious reason why the limit 1.414213... should be  $\sqrt{2}$ , in the absence of any indication for determining the succession of digits in the decimal. This criticism does not apply to the second example, although in this case it would have been better to state explicitly the rule of succession. In the chapter on theory of equations considerable space is given to Horner's method for calculating irrational roots. Although the value and beauty of this method cannot be disputed, after considerable experience I have come to the conclusion that it is, on the whole, inferior to Newton's method, and we regret that latter has not been mentioned.

### Science and Technology.

*Agricultural Geology*. By R. H. Rastall. x+120 pp. (Cambridge University Press.) 10s. 6d. net.—The parts of geology likely to be of direct use and interest

griculturists are here set out in a very attractive manner. They are naturally concerned, in the first place, with the formation and special characters of various kinds of soil. To this aspect of the subject the first half of the book is devoted. After chapters dealing with the geology of water supply and drainage, and the use of geological maps and sections, the author goes on to consider the geographical distribution of the different kinds of rocks and their relations to agriculture and stock, the geological systems of the British Isles being surveyed in order from this point of view. The predominating influence of the geological structure and characters of the rocks in determining the suitability or otherwise of a district for various types of agriculture is well brought out, although the importance of other factors is by no means belittled. The last chapter, by Dr. F. H. A. Marshall, deals with the origin and geological history of the horse, the ox, sheep, the pig, and the dog. The book may be safely recommended to all students of agriculture, who will find it eminently worth reading.

*Tommy Smith at the Zoo.* By Edmund Selous. 183 pp. (Methuen.) 1s. 9d. net.—Tommy Smith visits the Zoological Gardens at Regent's Park from time to time, and has imaginary talks with various animals, thus learning much about their habits and environment in a wild state. We are not enamoured of his plan of endowing beasts with the power of speech and consecutive thought, yet we are glad to find that Selous has succeeded in writing an interesting narrative, which will appeal to the budding naturalist. The excellent photographs, which are beautifully reproduced, add greatly to the attractiveness of the book.

#### Art.

*The Art of Painting in Pastel.* By L. Richmond J. Littlejohns. 189 pp. (Pitman.) 12s. 6d.—In the first chapter the writers say that "every medium could be used in the way for which it is most naturally adapted"—a truism exemplified by the admirable pastel-drawing of Mr. Brangwyn which serves as a masterpiece. The qualities of that drawing could not have been rendered by any other medium than pastel. If the principle which the writers emphasise at the outset had been adhered to throughout the work, the book might have been quite admirable. As it is, to take one instance, do the writers seriously maintain that the effect of plate xxvi. could not have been rendered equally well by either oil or water-colour? If a book of this kind were put into the hands of the beginners to whom it is addressed, the only result would be to impress the technical manner in which illustrations are rendered upon those beginners, because they were beginners, they would see nothing else, and it would prevent and hinder their own study of Nature.

#### Miscellaneous.

*The School World in Ferment. Interpretations of the War as a New World.* By Prof. Nicholas Murray Butler. 154 pp. (New York: Scribner.)—Educational leaders are rightly concerned with the interpretation of the war, and President Butler, of Columbia University, has issued in collected form various addresses which he has delivered over the period September, 1914, to June, 1917. Apart from the transcendent interest of this American interpretation of the war as an inevitable clash of two ideals, the democratic and the autocratic, equally apart from the clarion call to the American to range himself actively among those who fight for the future of democracy in the world as a whole, there is manifest in these addresses so passionate a patriotism, so avid an ambition for the world's well-being, so trenchant a treatment of the true ideals of national existence, that there must have been few who could resist the appeal to give them-

selves wholly to the prosecution of the good cause. For the teacher who teaches the ideals which are now summarised under the term "Civics," whether by right of a special appointment or *en passant*, because he is merely a good citizen, these addresses have a special appeal as a statement of the case for the American contribution to civilisation. The American Constitution presents to the whole world a lesson in federation, a volume of experience in the rule of law among the States of the American Union, the rule of law in a realm which is, or has been, almost international. The final address suggests the hypothesis that the issue of this war may be to determine whether man is still in progress or has begun his decline. If the strength of the men and the nations that love liberty is inadequate to the severe task of establishing freedom on a secure basis, then man has crossed the Great Divide of his political history, and is to begin a descent into those dark places where force and cruelty and despotism wreak their will. The issue will, in the last resort, be decided, not by Governments, not even by armies and navies, but by men and women whose convictions and stern action are the foundation upon which Governments and armies and navies rest. There can be no faltering by those who love their fellow-men.

#### EDUCATIONAL BOOKS PUBLISHED DURING NOVEMBER, 1917.

(Compiled from information provided by the publishers.)

##### Modern Languages.

*Labiche, "Le Voyage de Monsieur Perrichon."* Edited by H. L. Hutton. (Oxford French Plain Texts.) 48 pp. (Clarendon Press.) 6d. net.

"A Foundation Course in Spanish." Part ii. By L. Sinagnan. x+90 pp. (Macmillan.) 3s. net.

"Spanish Business Conversations and Interviews." 114 pp. (Pitman.) 2s. net.

##### English: Grammar, Composition, Literature.

*Hazlitt, "Selected Essays."* Edited by George Sampson. xxxviii+252 pp. (Cambridge University Press.) 3s. 6d. net.

"Antony and Cleopatra." Edited by J. H. Lobban. (The Granta Shakespeare.) xxx+216 pp. (Cambridge University Press.) 1s. 3d. net.

"Poems of Keats: Endymion, the Volume of 1820, and other Poems." Edited by W. T. Young. xxxvi+332 pp. (Cambridge University Press.) 3s. net.

*Longfellow, "Selections."* Edited by E. A. Greening Lamborn. 80 pp. (Clarendon Press.) 1s. net.

"Holinshead's Chronicles." Edited by R. S. Wallace and Alma Hansen. 216 pp. (Clarendon Press.) 1s. net.

"English Composition." By Dr. C. W. Greenough and F. W. C. Hersey. (Macmillan.) 7s. net.

"Manual of Good English." By H. N. MacCracken and Helen E. Sandison. xxvi+336 pp. (Macmillan.) 4s. 6d. net.

##### Geography.

"Introductory Geography." By H. Clive Barnard. 154 pp. (Black.) 1s. 8d.

"Peeps at Poland." By Monica Gardner. 88 pp. (Black.) 2s.

"The Elementary Geography." By F. D. Herbertson. New edition, revised by O. J. R. Howarth. Vol. iii., "Europe." 112 pp. 1s. 6d. Vol. iv., "Asia." 128 pp. 1s. 6d. Vol. vi., "The Three Southern Continents." 186 pp. 2s. (Clarendon Press.)

##### Mathematics.

"A Treatise on Statics." Vol. i. By G. M. Minchin. 464 pp. (Clarendon Press.) 10s. 6d.

**Science and Technology.**

"Agriculture and the Land: with Some Account of Building Societies, Garden Cities, our Water Supply, and Internal Communication." By G. F. Bosworth. (Cambridge Industrial and Commercial Series.) x+94 pp. (Cambridge University Press.) 1s. 6d.

"Quantitative Chemical Analysis." By Dr. Clowes and F. Coleman. 604 pp. (Churchill.) 12s. 6d. net.

Villavecchia, "Treatise on Applied Analytical Chemistry." Vol. i. 492 pp. (Churchill.) 21s. net.

Tognoli, "Reagents and Reactions." 236 pp. (Churchill.) 6s. net.

**Miscellaneous.**

"The Cambridge University Calendar for the Year 1917-18." xxviii+1066 pp. (Cambridge University Press.) 8s. net.

"Cambridge University Examination Papers. Michaelmas Term, 1916, to Easter Term, 1917." Vol. xlvi. iv+570 pp. (Cambridge University Press.) 31s. 6d. net.

**CORRESPONDENCE.**

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

**The Study of History in Day Continuation Schools.**

THE objects of the study of history in day continuation schools should be to arouse the interest of the pupils in the past, and through the past to explain the many-sided life of the present; to widen their horizon and to stimulate their imagination; and to fit them to discharge their responsibilities by taking an active and intelligent part in the world in which they live. The history taught should not only deal with matters of government, but also illuminate the whole life and human surroundings of the student. Treated in a broad and generous spirit, it should form, in close connection with literature and geography, the best humanistic course for these schools.

With a view to the accomplishment of these objects we make the following suggestions:—

1.—Care should be taken to select, so far as possible, such teachers as are also students of history and have a real interest in the subject.

2.—An ample supply of books, maps, and illustrations should be provided for each school, these being as indispensable to the study of history as laboratory apparatus is to that of science.

3.—Local history should be kept in continuous and vital connection with the whole history work.

4.—Social and economic conditions which affect and explain the development of the community should be given their due place in the teaching.

5.—In the later stages some attempt should be made to explain the machinery of modern government by tracing in outline its historic development.

6.—At some stage, if not in all, attempts should be made to show the pupils the effect of general history upon the development of their own community and of the British Commonwealth as a whole.

7.—Throughout the work the training afforded by history as a means of self-expression, both spoken and written, should be fully utilised.

8.—Since the outlook and interests of the pupils vary at different ages, the selection and treatment of the subject-matter should be adapted accordingly.

Finally, it must always be borne in mind that even the best teachers, in the short time at their disposal, can convey only a few facts to the minds of their

pupils; the best they can do is to interest their students in the past and make them want to read about it, and then to put the right books into the hands of the right pupils—for it is the much these young workers acquire from their own reading which is so essentially important.

ALICE STOPFORD GREEN,

President of the Historical Association  
22 Russell Square, London, W.C.1.

**Decimal Coinage.**

ALLOW me to express my pleasure at seeing in December SCHOOL WORLD an article on a labour-saving device so important as decimal coinage. People who have given real attention to the matter are all agreed on its labour-saving value. It remains to settle the best system and its method of introduction, and to convert the nation to it. It is important to have a good workable system to place before the nation, and I venture to question whether the "mil" system of the Decimal Association satisfies this condition. The things are I have difficulty in distinguishing between pennies and halfpennies on the top of a bus in the dark. With a pocketful of coins of denominations 5 mils, 4 mils, 2½ mils, 2 mils, 1 mil, how could possibly make up my 'bus fare'? Even by daylight it is a job for an accountant. No! if we are to persuade the nation to accept our scheme our small coins must be few in number and not very different from present ones. Then, again, the keeping of accounts in the mil system, as stated in the Decimal Association circular, shows little, if any, saving of labour over the present system.

The farthing is little used, even among the poor, and its chief use is the bad one of inducing the bargain-hunting lady to buy for 4s. 11½d. ("four-eleven-and-a-half" as the shopman says) an article which she would refuse at 5s. The smallest coin in serious use is the halfpenny, and if we are to carry the nation with us this must be our unit. We thus arrive at the dollar-dollar system already in use throughout the continent of North America.

During the transition period the bronze coins will be doubly named, one as cent and halfpenny, the other as 2 cents and penny. The chief denominations have excellent names in "dollar," "dime," "cent," in addition to a good supply of popular names for the minor denominations.

The international goodwill of the sovereign depends on the stability of the credit of the country, and a well-made British gold coin will enjoy equal popularity so long as the credit of the country holds.

Being a native of the United Kingdom, although born in England, I subscribe myself with a useful and even necessary addition to our vocabulary which also comes from across the Atlantic

BRITISHER.

**The School World.**

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# The School World

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FEBRUARY, 1918.

SIXPENCE.

## EGOISTIC AND ALTRUISTIC STANDARDS IN EDUCATION.<sup>1</sup>

By Sir JOHN D. McCCLURE, LL.D., M.A.

In the classroom there is a very real—albeit implicit—appeal to the selfish side of a boy's character and to the spirit of emulation. Of course he may occasionally be exhorted to play for the sake of the honour and good of the school and in order that he may be a better citizen; but these motives are far from being cogent even when present, and, as a rule, are conspicuously absent. On the football field a boy learns to play for his side—be it his or school—to forget himself and think of the society of which he is a unit; and popular schoolboy opinion rightly condemns the player, however brilliant, who is markedly constantly selfish. As a consequence, too, the standard of fair play is high; and, perhaps most, of the players would rather lose the game than win it by a doubtful unfair act. It is their pride that they "play the game." It is notorious that in the classroom a much lower ethical standard is adopted; could scarcely be otherwise under existing conditions. Yet who can be satisfied with things as they are?

Our difficulty is enormously increased, too, the prevalence of the low ideal which leads to worship success. From his earliest years a boy learns from his surroundings, if not from parental precept, that the great object of his life is to be *something*, but *somebody*. Herein lies the justification of the criticism of a friendly American: "You pride yourself on your incorruptibility, and quite rightly; for in England there is probably less actual bribery by means of money than in any other country. But you can be bribed by power." Will it ever be possible, then, in a boy's school life to make him really eager in the classroom, in his study,

and on the playing field to develop to the utmost his body, mind, and soul, not alone for his own sake, but for the sake of the school and for the sake of the nation? If so, how is it to be achieved? How begun?

Again, one cannot be blind to the fact that the interest which many have shown in educational reform is due to their belief that improved methods will lead to greater efficiency in the workman, and thus will help to secure to this country a position of advantage in the coming struggle for commercial supremacy. Unrestricted competition, ruthless, inexorable, is to be the order of the day. Hence we shall be urged—nay, we are being urged—to direct all our energies to the production of a body of clever workmen, "to commercialise our education, to make it a paying proposition, to make it subservient to the God of Wealth, and thus convert us into a money-making mob." Ruskin has said that "no nation can last that has made a mob of itself. Above all, a nation cannot last as a money-making mob. It cannot with impunity—it cannot with existence—go on despising literature, despising science, despising art, despising Nature, despising compassion, and concentrating its soul on pence."

But how are we to defeat this project of national suicide, this foul conspiracy against the peace of the world and the welfare of mankind? By insisting that a man needs education first to enable him to make a living, but chiefly to enable him to live a life; by realising that it is but a short-sighted and selfish patriotism that ends with love of country and service for her; by fixing the aims of education above money and beyond the nation. "Education," to quote Mr. Paton, "like finance, must be planned on international lines by international consensus with a view to world peace." But the application of such principles is one of the hardest as well as one of the most important tasks by which we are confronted; nor is there any meeting to be held by this conference of greater moment than that of Monday morn-

From the Inaugural address to the sixth annual Conference of Education Associations at University College, London, on January 2nd, 1918.

ing, when we are to discuss the educational basis of internationalism.

May I touch on one more topic? The charge brought by Matthew Arnold against the upper and middle classes of England that they care little for "the things of the mind" has been repeated and amplified by later writers. "In our schools the athlete is the hero, not the scholar." The writers of popular novels seem to have entered into a conspiracy not to adopt for a hero any man who manifests any serious intellectual interest. Here is a description taken from a fine work by one of the best of recent novelists: "He was the product of an English public school and university. He was, moreover, a modern product of those seats of athletic exercise. He had little education and highly developed muscles—that is to say, he was no scholar, but essentially a gentleman—a good enough education in its way, and long may Britons seek it!"

And the same doctrine is being openly taught and insidiously instilled on all hands. "Beware of him," said a Yorkshire manufacturer to the parent of one of my boys about myself; "he's a well-meaning man, but he is sure to try to induce you to let your boy go to Oxford or Cambridge, and then he'll be ruined." "I don't care much about my boy's brains," said a parent to an Eton house-master. "I can always buy brains. I want him to get into the eleven or the boats." Even our greatest writers win our sympathy for the wickedness of amiable characters by pleading the excellence of intention.

"No nation, I imagine," says Mr. Temple, "has ever gone so far as England in its neglect of and contempt for the intellect." But even this is not the worst. Our children are taught to fear cleverness because, forsooth, it is inconsistent with, if not actively hostile to, goodness. "Be good, sweet maid, and let who will be clever." "If goodness of character," to quote Mr. Temple once more, "means more than control of the grosser passions, if it means the capacity to serve our nation as useful citizens, it is unattainable by anyone who is content to let his mind slumber."

From such consideration of our problems three great truths leap to the eyes. First, that no legislative enactment or series of enactments can do much towards the solution of these problems; at most they can improve the conditions of, and provide opportunities for, those people upon whom the burden of solution lies. Secondly, that to deal with these difficulties effectively requires years, nay generations, of wise effort on the part of carefully trained enthusiasts. Thirdly, that now, as always, the improvement of education depends upon the improvement of the teacher; for on the char-

acter, the skill, and, above all, the idealism of the men and women who are engaged in teaching the youth of the nation the welfare of the country ultimately depends. May my concluding remarks be on this, the greatest topic of all?

I believe in conferences. There are no people who need them more than teachers do. Constant contact with immature minds, the inevitable drudgery of some of our work, necessary isolation—or comparative isolation—in which we are called upon to live, which vents us from any save occasional and, as it were, spasmodic visits to the world outside, mental and spiritual exhaustion which the faithful discharge of our duties never fails to produce, and which makes us sometimes incapable of utilising the precious leisure moments of profitable reading or thinking—all these tend to limit one's horizon, to narrow one's interests, to make a man the victim of his own virtues and his vocation the prison of his soul. But, at least, we can exchange ideas and thoughts, gain light upon our way from the bright lamps of our fellows, realise that our conflict is but part of a great whole, renew our courage, strengthen our faith, and clear away the mists which distort and sometimes hide the glorious ideals after which we have pledged ourselves to strive. And then there is the human contact, the joy of social intercourse. In pre-war days I have known this side of a conference to be emphasised, with the result that our meetings were less fruitful than they might and ought to have been, because we were insufficiently informed against the prospective ravages of international hilarity. But now we are all in earnest, some of us so much so that it is difficult to take us seriously. Someone has said that in teachers go through life supremely unconscious of their own insignificance. Why the remark should be confined to teachers is not obvious, but the remark itself is profoundly true: there is nothing so calculated to make a man feel his own insignificance as the realisation of the grandeur of the work he is called upon to do, and this, we must confess with shame, we have neither achieved, nor, perhaps, attempted to achieve.

Unconscious of our own insignificance? Think far too much of ourselves? In this sense true, in another profoundly false! The fundamental danger of our life is that we shall not think enough of ourselves, or, rather, that we shall not believe enough in the greatness, the dignity, the importance of the work we are privileged to do. We have fallen into the common error that one of the secrets of greatness is to blame others for our own shortcomings. We have railed against others for slighting our work when the fault w

own, because we never showed by our words or actions that we held in high honour the work we were doing and that held it to be sacred. We have been prone to sink into the drudgery of routine, lose sight of our great responsibilities, to be selfish and spiteful when others failed to appreciate us. The true teacher is an invincible optimist, for his work will not permit him to be otherwise. We are called upon to do the greatest work in the world; let us do it in the greatest way, with a stout heart and great soul.

A young second-lieutenant in one of our County regiments was much disgusted by the conversation and blackguardly behaviour of some young officers. His wrath expressed itself thus: "They are not worthy to suffer and in so great a cause as ours." I heard of at a moment of despondency, weariness, apathy, and it quickened me into renewed effort. I turned his words into a question which sat to myself, and which I now leave with : "Am I worthy of so grand a calling, of privilege of living and labouring in the best work a man can be called upon to do?"

## INQUIRY INTO THE VALUE OF THE STUDY OF LATIN AND GREEK.

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### II.

#### THE "MENTAL GYMNASTIC" ARGUMENT.

WE come now to the third argument in support of the study of Latin and Greek, namely, that they give "a unique mental training." When the advocates of classical studies are led to admit that the average boy student would get a better knowledge of classical culture through translations and ancient history, and that the average boy gets little or no literary training from his classical studies, and frequently becomes imbued with a distaste for other studies because of the unattractiveness of the mental food offered him at school, such advocates usually reply as follows: "Even if this is so, the study of a difficult language like Latin gives a valuable and unique mental training, cultivating memory, observation, concentration of attention, and the exact use of language."

Mr. Livingstone himself in reality falls back upon this type of argument, when in the later part of his book he takes up the question whether the main benefits of classical studies could not be gained through translations. Canon Lyttelton, in a defence of the teaching

of classics, written when he was headmaster of Haileybury, adopts the argument still more frankly. He says:

To be told by great scholars and historians that our civilisation, philosophy, and art date from Pericles, or that the imbuing of the expanding intelligence with the glorious fruits of the Augustan age is the finest effort of pedagogy, is a dismal mockery for a raw and untrained schoolmaster whose pupils are going into Sandhurst at seventeen, or to Ceylon at sixteen. No wonder that secret scepticism tells upon his energy. He perhaps stops in his weariness to fortify himself with some finely written defence of classics, and finds nothing in it but a catena of bewildering anachronisms. Cannot something be done towards suggesting a true and intelligible reason for boys to work at classics, even though nine-tenths of them are never to be scholars? Putting it quite briefly, the learning of these ancient languages in its earlier stages affords an opportunity for training in precision of thought, memory, inference, and accuracy; in its later stages it is capable of enriching the mind with noble ideas. (In "Teaching and Organisation," edited by P. A. Barnet.)

Let us consider, then, this argument that the learning of Latin gives such an excellent mental training, even when not pursued to an advanced stage. The suggestion is that the pupils do not learn Latin in order to *read* Latin, but that the training given is much wider in its ultimate effects; it is implied that the training "spreads" to other kinds of mental activities, and that all the so-called "faculties" are exercised, so that the mind, as a whole, is trained even by one subject.

This argument leads us to consider the educational doctrine known as *formal training*. This is a somewhat difficult and complex question, but some serious and continuous thought on the subject is essential if we are to give due consideration to the problem before us, or, indeed, to any problem as to the school curriculum.

I will try to state as simply as possible the trend of recent thought on the subject.

*Criticism of the "mental training" argument.*—(a) Some of the old psychologists used to speak as though the mind were divided into a number of faculties or powers, such as observation, memory, judgment, each largely independent of the others. Further—and this is the important point for us—they supposed that the exercise of observation (or memory) on any one kind of material improved the faculty of observation (or memory) *in general*—that is, for all kinds of material. Now, this extreme position has been almost entirely abandoned. One scarcely requires psychological experiment or analysis to believe that practice in the observation of, say, plants is not likely to result in any improvement in the observation of the expression on human faces or of

pictures, unless, perhaps, pictures of plants. The exercise of judgment upon the value of horses will scarcely improve one's power of judgment as to the morality of divorce. Most of us have known distinguished mathematicians or classicists, the soul of accuracy in dealing with mathematical symbols or Greek particles, but recklessly inaccurate in statements as to political matters; or distinguished men of science, rigid in their requirements of exact proofs of facts and laws in the material universe, but satisfied with most elastic reasoning and wobbly proofs in reference to matters of the mind.

(b) Furthermore, the old view, at least in its extreme form, has been seriously undermined by recent work in experimental psychology. For example, the most thorough series of experiments upon the *improvement of memory* tends to show that, if one exercises one's memory on, say, poetry, it is likely to be improved for poetry, but need not be for prose.

It used to be thought that the study of, say, Latin "strengthened the memory," so that a boy could remember history or poetry better for having ground away at Latin verbs. We have now good reason to believe that practice of the memory with any given material will effect but little improvement in the memory for a second kind of material, except in so far as the two materials resemble one another.<sup>1</sup>

We certainly have no proof that the toilsome memorising required in the learning of Latin and Greek will necessarily have any beneficial effect on the memory in general—for example, the memory for dates or chemical formulæ. Still less likely is it that, even granting any such "transferred" improvement, it will be any greater as a result of learning Latin and Greek rather than other subjects which may be taken up in their place.

(c) As regards *accuracy*, it has been shown by experiments that an improvement in accuracy in dealing with one kind of arithmetical problem need not be accompanied by improvement even in other kinds of arithmetical work, so specialised may be the development of "accuracy." Much less, then, need we expect the training in accuracy given by arithmetic to show itself in other and different subjects. In other words, accuracy is largely a specialised habit, and we cannot be certain that the improvement in accuracy in Latin prose will result in any accompanying increase in accuracy in other mental work.

Even granting that it is probable that, in the long run, as a result of Latin prose exercises, the boy will learn to consider the meaning of *all* the English he reads more careful and not merely that English which he has translate into Latin, it is still more probable from a psychological point of view that such a habit would be acquired through extensive practice in careful reading in many various branches of thought and knowledge in English *works themselves*. When we consider question of the care and accuracy developed through translation from Latin into English we find that such translation is still less likely to give a general mental improvement in the respects than would result from the study of various kinds of works in English.<sup>2</sup> For the same kind of mental processes which will be required for the careful reading of difficult English are still more likely to be developed by the reading of other difficult books in English itself. In reading English, for example, the dependence on memory which (so prominent in the study of Latin) is reduced to a minimum, and the relative portion of attention to the meaning in context of (i) the present sentence, (ii) the preceding paragraph, and (iii) the whole passage at a given moment respectively, is quite different from what it is in the case of Latin. In other words, the total mental activity is considerably different, when reading even a "stiff" book in English, from what it is in translating Latin.

For a training in accuracy in dealing with English, then, we are much safer in relying upon direct training with English. It is possibly be argued that the expression of idea in two languages, one very different from the other, gives a more certain grasp of idea so expressed. Suppose we concede this—it is probably true in many cases. But it should be noted that this is, *a specific training in reference only to the ideas actually dealt with in this manner*. For the majority of boys who study Latin these ideas are so meagre in scope and number, compared with the mass of ideas they have or will have to deal with in the vernacular, that this advantage is very slight. But I believe that this will be one of the most valuable results from classical studies when carried to an advanced stage, i.e. when the student reads widely in philosophy, political science, and history in Greek and Latin.

(d) As regards the training given by Latin and Greek in *reasoning*, here again it is

<sup>1</sup> "Experimental Psychology in Relation to Education," by C. W. Valentine, p. 143. Of course, we cannot always infer that there will be no general training of the memory as a result of several years of practice with one subject, simply on the ground that no such general improvement shows itself in the course of experiments lasting only a few weeks. But the important point is this, that the experiments were long enough to show a distinct improvement in the memory of the material on which it was being exercised, yet without any general improvement of the memory taking place.

<sup>2</sup> If a boy is led to see the value of accuracy and thus to set up an ideal of accuracy in work, it will tend to show itself in all his work. There seems no reason why this general ideal may not be developed in any school subject. More depends here upon the teacher and his methods than upon the subject taught.

pecific kind of reasoning that is involved. Sidgwick pointed out, it is not a true reasoning from cause to effect.

It is, of course, an excellent training in the kind of reasoning required for Latin and Greek: as to what function this word performs, or what that phrase must mean from form. To a less extent it is a training for the kind of "reasoning" required in German; still less extent for that required in French; and, again, for that required in the mere deciphering of the meaning of obscure English—by consideration of the position of words and phrases, etc. (that is, largely through a mastery of English grammar and syntax), in so far as it is common to both Latin and English. But it has never yet been shown how Latin can give the training required for this in any way better than that given in the direct study of English itself, and of its grammar, syntax, and analysis. If it be urged that some different language is necessary for comparison, it may be replied that a modern language could give this. The argument which is based upon the fact that Latin and Greek are more different from our language, and claims that they, therefore, give a better training in the understanding of the form of our language and so prove reasoning from form to meaning, seems to me to be supported by no proof either in practice or in psychological theory. That they may be necessary for the linguistic scholar's understanding of English and its development is a different question, to which I shall refer later.

Further, in translating Latin we are reasoning to a considerable extent about rules. The language and its difficulty absorb most of our attention: at least that is the case with the average boy (and Sidgwick maintains that he may often fit words to words without realising the meaning of either). Whereas the kind of training in reasoning we most want is reasoning about facts and hypotheses and their interconnection; and this can be best obtained simply by reasoning about them with a familiar language as medium, without the distraction of a strange language.

To sum up, *psychological considerations point emphatically to the conclusion that the best training for the thorough understanding and use of reasoned argument in English, and in the easy reading of comparatively difficult books in English, is practice in the reading of such books in English itself and practice in reasoning in English.*

But this, of course, implies that books of the right degree of difficulty are selected, and that a knowledge of the exact meaning of their contents will be demanded. We must

prescribe for reading books which really make a demand for serious care and thought, books which are "difficult," not because of their antiquated style of language, as in Chaucer or even Shakespeare, but because of their continuity of argument, interconnection of parts, and, to a certain extent, depth of thought. Here we must, of course, be careful not to go to a stage which is necessarily beyond the reach of youth on account of immaturity. But this limits us as to emotional content rather than as to intellectual severity. In mere logic the boy of twelve is probably, if properly taught, much more like his father, and capable of understanding equally intricate argument, than he is like him in respect to emotional development. And even this latter relative disability disappears during adolescence, and at fifteen or sixteen the greatest books in our language in most departments of thought are capable of being brought within the comprehension of youth—that is, given the adequate training in English in the thought and knowledge necessary as a preliminary for such books.

I think there are few competent psychologists of to-day who would dispute the above argument, that the best preparation for sound reasoning about any subject, be it politics, or theology, or economics, or chemistry, is practice in reasoning in that subject itself, adequately guided and criticised.<sup>3</sup>

It has been urged that Latin affords an "unrivalled instrument for stimulating the reasoning faculties at an age in which their very existence might almost seem open to doubt."<sup>4</sup> An obvious reply to this is suggested, namely, that the reasoning involved at this stage may be of a very meagre type, as, indeed, those who have taught Latin to children know is often the case with the average or dull pupil. Too often the "reasoning" involved, when it is not guessing at the meaning of phrases from the given sense of other parts of the sentence, is the applying, in a rule-of-thumb manner, of such rules as "Take the verb first"—"Now the subject"—"What word agrees with the verb?"—"Any object?" Curiously enough, the attempt to translate by "guessing" what is probably the meaning of a given word or phrase so as to develop a sensible sequence of

<sup>3</sup> If there persists a demand for a formal training in reasoning—a training which may show its effects in reasoning on any kind of subject—then a short course in logic, which studies the general forms of both deductive and inductive reasoning and considers the general nature of proof, seems to be the best means. Or the logic of scientific method may be specifically brought out in the teaching of natural science. I do not say that even logic gives such a training in reasoning as would eventually show itself in all kinds of reasoning. Probably it does in the case of the best students, but not of the worst. Certainly if such transfer of training does not take place in the case of this study of reasoning, the most abstract and general, and therefore the most ready for direct application to all types of reasoning—there seems little hope of such a transference taking place when the abstracting (e.g. from the reasoning involved, say, in the construing of Latin) has first to be done by the pupil, and later on applied to a different substance-matter. Such a subject as logic, no doubt, is only suitable for pupils in the highest classes of secondary schools.

<sup>4</sup> See E. Lyttelton, *op. cit.*, p. 214.

thought, is probably, from the point of view of reason-training, as valuable a part of the process as any, yet it is a means which is usually discouraged, and, of course, as a guide to the meaning of the Latin is often disastrous.

But let us take up the question as to the special suitability for young pupils of such reason-training as is given by Latin. In the first place, there is a similar type of reasoning involved in the study of a modern language, which may be studied at the same age or earlier. Even admitting that the amount of linguistic reasoning is not so great proportionally to the amount of memory work, in studying those modern languages which resemble English more than does Latin or Greek, yet at least this type of reasoning is involved, and in so far as a modern language is easier it is likely to be more fitted for the average pupil, when the language is started very young.

Further, no experienced teacher would deny that boys of twelve can be got to reason about such matters as physical geography, animal and plant life, and even human affairs in history, biography, and literature; while more abstract reasoning is involved in mathematics suitable for this early age, and quantitative and mathematical ideas are constantly and directly involved in reasoning on almost all kinds of subjects of general interest in everyday life. So that there is ample scope for exercise in reasoning given in subjects suitable for young pupils.

Above all, we must remember that the setting free of the average boy from the study of classics would enable much more to be done to introduce him during his later years at school, through the medium of English, to more of the various subjects which essentially involve reasoning, and would provide so excellent a preparation for better reasoning on the subjects in after schooldays—for example, the great social sciences of history and political science (including the study in translation of masterpieces from the Greek and Roman classics); geography and its correlation with history, and including physical and economic geography, in addition to a due attention to physical and biological science, for which adequate provision should be made even for the boys not specialising in science, with whom we are at present concerned.

(e) We have not quite finished with the "mental training" argument. It is sometimes said that the very difficulty and dryness of Latin provide a unique mental gymnastic; the boy develops a power of volitional attention to what is uninteresting, and so later in life he is always able to attend better to things when necessary, even if they do not interest him.

Some modern psychologists would scout the argument and say that there can arise a improvement of attention only as a result of added interest arising—specific interest in specific things—or as a result of added motivation for attending; in other words, that no exercise of volitional attention upon one subject will improve the power of attending to other subjects.

Suppose we take a more conservative view in respect to this question.<sup>5</sup> It may be admitted that forced attention to Latin, *in so far as it brings success and satisfaction*, may lead the youth to face other inherently uninteresting things in a better spirit and with more determination. And if the removal of Latin from the boy's curriculum meant the disappearance of all necessity for effort and the substitution of "soft options," it would, no doubt, be an educational disaster.

Two replies, however, must be made to this argument. In the first place, mental effort is by no means confined to moments when we are dealing with uninteresting subjects. Keen interest and the most intense mental effort may be thoroughly consonant with one another. Also the rousing while at school of as many varied lines of interest as possible, consistent with an adequate degree of thoroughness, will make more probable a keen attention, interested and not forced, to any subject which has to be dealt with in later life.

Furthermore, even with Latin removed from the average boy's curriculum, plenty of opportunity and necessity for even "forced" attention will remain, if that is held to be necessary; especially if, as is being suggested, the time spared is given to really solid study in English, involving close reasoning, with perhaps, the more thorough study of a modern language in the earlier years.

This argument of the value of the difficulties of Latin cannot be better met than in the words of Sydney Smith written so long ago as 1825: "To the familiar objection that it was injurious to the pupil to remove difficulties [from the study of Latin] he answered that you might just as well say that the effect of Mr Macadam's new roads would be to make the horses fat!"<sup>6</sup>

And every difficulty removed in the method of a subject, or the removal of a difficult subject itself, not only allows us to use our mental energy by covering more ground, as this simile suggests, and so reaching higher stages more rapidly, but set us free also to face difficulties in *other* subjects.

Furthermore, the admission made above, as

<sup>5</sup> The question is discussed more fully in a paper in *Mind* for January 1918, by the present writer, on "Volitional Attention and its Training."

<sup>6</sup> Quoted by Lyttelton, *op. cit.* p. 216.

the value of difficult studies as a means of training attention, was limited by the sentence "so far as it brings success and satisfaction." It must be remembered that in a large number of cases the forced study of Latin fails to do this. Rather it tends to disgust the youth not only with Latin, but also with most of his school studies. Sir Samuel Dill, after long experience in teaching both in school and university, says:

The effort to force the classical system on the mass boys, irrespective of their peculiar type of mind, with but slight regard to their destination in life, only injures the boys submitted to it, but is apt to discredit real classical discipline, and its splendid influence on a certain number with an aptitude for such studies.

Another distinguished classic, a man of great gifts as a teacher, when I asked him what benefit he thought the average student in the less Latin course in his university gained, replied: "They might as well be breaking bones." Canon Lyttelton writes: "Many a score of our pupils leave off too young to get even a glimpse of the beauties of any authors they read, many a score go on long enough to find that the taste for such reading has been denied them." So experienced a teacher and enthusiastic a humanist as Mr. A. C. Benson also maintains that classics bring little interest to the dull or even average boy.

If this be true, then it is almost certainly true that the dull "grind" brings little benefit by way of training of will or of voluntary attention. Effort constantly expended in vain gives no encouragement to renewed effort.

Nevertheless, if this admittedly difficult and complex mental work is lost, even to some of our brighter pupils, through the dropping of Latin, we must see to it that some solid material is provided as a substitute, by means of a further development of scientific studies, or of the social sciences, or of the English courses as indicated above.

(To be concluded.)

## HOW TO WRITE WITH THE LEFT HAND.

By P. B. BALLARD, M.A., D.Lit.

### IV.—ADULT LEARNERS.

WHEN we come to deal with the adult who, for some reason or other, has been deprived of the use of his right hand and wishes to learn to write with his left, we encounter a special problem. It is not a case of learning something from the beginning, but of finishing a task already begun. For with him the intellectual part of writing is complete; it is only the motor part that needs to be perfected. The learner knows quite well

what he wants to do, and what he intends to do; but he cannot do it. It is, in fact, a much easier matter for an adult to learn to write with the left hand than for a child to acquire the art with either hand. He can learn it in much less time and with much less effort. Even as a matter of muscular control he does not start "at scratch." His left arm has already received a considerable education in movement; mainly in the simpler and ampler movements, it is true, but not entirely so. He has learnt with his left hand to button his coat and his glove, to handle a fork, and perhaps to shave. If he is a violinist or a pianoforte player his fingers will have acquired much delicate skill. His left hand has, in fact, been directly educated in a variety of ways. But that is not all. It has also been indirectly educated through the training which the right hand has received. About this fact there can be little doubt. Whenever we learn to perform

Sep. 18<sup>th</sup> 1917. This is my first attempt to write with my left hand. P.B.B.  
(Time: 3 minutes)

Oct. 18<sup>th</sup> 1917. This is written with my left hand after ten minutes' practice per day for a month. P.B.B.  
(Time: 2 min.)

FIG. 11.

a definite act of skill with the right hand, a certain amount of that skill—not much, it is true, but still appreciable—is also learnt without any practice at all by the left hand.

Let the reader try to write with his left hand and he will probably be surprised to find how well he can do it, especially if he compares it with an attempt to write with his foot. I am myself pronouncedly right-handed, my left hand has had no specialised training of any kind, and I am no longer young. Yet it will be seen from the specimen of my left-handed writing given in Fig. 11 that I was at the first attempt able at least to write legibly, and at the rate of 15·7 letters per minute. This result is, according to the averages obtained by Dr. Kimmins from tests given to about 2,000 boys,<sup>1</sup> equal in the matter of speed to the achievement of a boy about seven and a half years old; a boy, that is, who has already prac-

<sup>1</sup> See *Child Study* for June, 1916.

tised writing for about two years. A reserve of writing skill seems to have been accumulating for many years in my unused left hand.

After ten minutes' practice per day for a month I was, as will be seen from the second specimen in Fig. 11, able to write much better and more than twice as fast. This speed (39·5 letters per minute) is nearly equal to that attained by an average boy of eleven. In other words, so far at least as speed is concerned, I had gained as much in a month as a young lad would have done in three and a half years. I do not record this as a boast (in fact, I believe most grown-ups would do much better), but as an encouragement. The adult learner may take heart of grace: to learn to write with the left hand is not a matter of great difficulty.

The print-writing reproduced in Fig. 11 was adopted for purposes of practice: it in no way resembles my ordinary writing. It is, however, worthy of note that when I write cursorily with my left hand the result bears a very striking resemblance to the hand I wrote when I was a boy of seven. It seems to indicate that at whatever age writing is acquired it goes through the same stages of peculiar and personal development.

There is another and more definite form of indirect training, or cross-education, of the left hand to which reference has already been made—the training in reverse movements. The question here arises: Should the adult learner adopt mirror-script for his left hand? If he is congenitally a left-handed person who has written exclusively with his right, he will probably find it quite easy to write in reverse. The numerous manuscripts of Leonardo da Vinci are said to have been written entirely in this way. The main objection to this style of writing is that it cannot be read by others without a mirror. Even the writer finds it difficult. Mr. Clausen, who writes readily in reverse, says: "I know the Leonardo MSS. are written in reverse. I wonder if he was able to read them that way? I cannot read reverse writing, or only with the greatest difficulty, and not with certainty; but I suppose it is a matter of practice." Each will no doubt weigh the pros and cons for himself; will balance the advantage of economy in writing against the disadvantage of difficulty in reading. When it is necessary to write a normal hand, as in addressing an envelope, he can make shift to scrawl something that is at least legible.

An educated adult will have already acquired a definite and characteristic style of handwriting, and he will probably wish to continue that style when writing with his left hand. Unless it is signally unsuited to the left hand—unless it grossly violates the principles that

have been laid down—he can, no doubt, with patience and practice, succeed. But, unless he has a strong prejudice against it (to practise a type of writing that one dislikes is weary and unprofitable work), he would be well advised to



FIG. 12.

start with the simplest form of lettering possible. In Fig. 12 will be found a suitable alphabet based almost entirely on the straight line and the circle. This is recommended as a beginning only. The learner should develop his own style from it. The only warning necessary is:

Dorothy Vyse.

Let us, then, be up and doing,  
With a heart for any fate;  
Still achieving, still pursuing,  
Learn to labour and to wait

### V Axworthy

Not enjoyment, and not sorrow,  
Is our destined end or way;  
But to act, that each to-morrow  
Find us farther than to-day.

FIG. 13.—Schoolgirls' handwriting developed from print-writing.

sary is: Do not let your writing so far depart from the simple essential type that its legibility is imperilled. As one of the many ways in which a personal modification may be made, I give in Fig. 13 an example of the handwriting of two girls of twelve, both of whom began

print-writing four years ago. It is unnecessary to tell the observant reader that they are right-handed.

The type of writing having been decided upon, practice is, of course, necessary. Which is the best, the most effective, way to practise? In the case of school children the practice is given in the writing itself, not in exercises that are merely designed to give muscular control or manipulative skill. The days of pot-hooks and hangers are over. It is felt that the small excess of skill acquired in this way is not enough to compensate for the loss of interest in the art of writing. And, indeed, in any case, practice or no practice, the acquisition by children of control over the accessory muscles is necessarily of slow growth. It has been found by experiment in America, where drill in pen movements is much commoner than in England, that such drill is absolutely useless before adolescence sets in. It is found, in fact, that Nature refuses to be hustled. The older children, however, seem to benefit by this drill, which consists in rapidly and rhythmically making strokes and curves and ovals, the teacher setting the pace by counting or by using a metronome.

In the case of the adult, to whom drudgery may be full of meaning and promise, there is of the same objection to short cuts as there is in the case of the child. The earnest musician's attitude towards the irksomeness of five-finger exercises is very different from that of the reluctant beginner.

The first thing to do is to educate the arm. The reason for this has already been given. If the reader will try to write with his awkward hand he will find it easier to do with arm movements than with finger movements. Large free-hand writing is, therefore, the best starting point. A Frenchman named Albert Charleux, who at the age of forty had his right arm amputated, has not only acquired complete control of his left arm, but also had marked success in teaching left-handed writing to maimed soldiers at the Angers "Ecole Normale." He describes his methods in a little book entitled "Pour écrire de la main gauche." He points out the necessity of going slowly, and insists on the importance of educating the arm before proceeding to educate the hand. His pupils are first put to practise on a blackboard preliminary exercises of three simple types: first, horizontal and vertical lines of various sizes drawn backwards and forwards; secondly, oblique lines treated in the same way; thirdly, circles drawn clockwise and anti-clockwise. Then comes blackboard writing—large to begin with, but gradually diminishing in size. Finally comes writing with a pen on a flat surface. His exercises therefore follow

this order: Blackboard drawing, large blackboard writing, small blackboard writing, ordinary writing on paper. This procedure is quite in accordance with the teachings of psychology.

As soon as a one-armed man starts writing at a desk or table he at once encounters difficulties unknown to the normal man. He finds that the paper shifts as he writes: there is no other hand to steady it. This inconvenience can best be remedied by resting a paper-weight on the top of the page. Then, again, there is the difficulty of maintaining a healthy posture while writing. The ordinary man can rest both arms upon the desk and thus keep his shoulders level; but the one-armed man always has a tendency to lean over towards the armless, unsupported side. M. Charleux, in referring to this difficulty, says that it can be overcome by strength of will only.

The one-armed man will, no doubt, be content to write a plain simple hand, a hand which



FIG. 14.—Vertical left-handed writing (b) compared with (a) right-handed script and with (c) left-handed script written horizontally.

is written with facility and can be read without difficulty. Rarely will he wish to imitate the achievements of the professional penman—to do elaborate illuminating and lettering. There seems, however, to be no branch of penmanship which has not been mastered by M. Charleux. He can produce with his left hand the characteristics of the old manuscripts. And his method is ingenious. It can best be explained by reference to a diagram. He writes vertically down the page, as in Fig. 14, c. Right-handed script written in the ordinary horizontal manner with a broad pen is represented by a; b represents the same thing done with the left hand, and c left-handed script written vertically. It will be seen that by keeping the writing vertical the pen, when held in the left hand, bears the same angular relation to the vertical script as the pen in the right hand does to the horizontal. M. Charleux, although he does not teach his pupils this style, assures us that it can be acquired with very little practice.

The learner should not lose sight of the final

aim and purpose of such practice as he undertakes. He has not fully learnt how to write until he can do it without thinking about it—until it has become an automatic process almost entirely subconscious. It is necessary at first to attend to his posture, the way he holds the pen, and, possibly, the movements of his hand and arm. But the sooner he is able to cease thinking about these things the better. In learning, his attention should mainly be directed to the forms of the letters and words as they emerge from his pen. But this again is merely a stage in his progress towards the final goal, when his mind is free to concentrate itself on the ideas he wishes to express while his pen, almost without his knowledge, obeys the simple impulse to write.

The notion that all practice leads to improvement is false—and mischievously false. It is only successful practice that improves your form: unsuccessful practice vitiates it. The boy who, while writing in a copy-book with headlines, writes the first line as well as he can, and gets more and more careless as he proceeds down the page—and this progressive degeneracy is observable in nine copy-books out of ten—is worse than wasting his time. It is probable that the first line alone improves his style; the rest corrupt it. The moral is: Don't practise for long at a time. As soon as your hand is fatigued and you observe a falling-off in your writing cease at once. If you have a limited time to devote to practice, distribute it widely. Six periods of ten minutes each are much better than two periods of thirty minutes each. Even ten minutes is probably too long a period to start with. Make a strong effort each time to beat your former record. And don't expect too quick returns for your outlay of effort. It takes some time for the result of practice to register itself in the nervous system, so that after a long period of cessation of practice you will probably find that you have gained in skill. Hence the saying of William James: "We learn to swim in the winter and to skate in the summer." Distinguish between practice with the view of improving your style and practice with the view of fixing it—of making it automatic. The former demands concentrated attention on the script; the latter, a wise inattention. Abundant written composition is much the best way to press your writing forward towards an adequate degree of automatism.

Avoid unnecessary troubles, such, for instance, as writing with a steel pen. Even the right-handed find such a pen scratchy and unsympathetic; the left-handed will find it still more refractory. Use a smooth-running gold pen; it is cheaper in the long run and will save much friction between pen and paper.

Once you have it keep it for your own use, for it gradually accommodates itself to your peculiarities of handling. If you let a right-handed friend use it you will find it pressed little out of shape, and the process of accommodation has to begin over again.

Never use more than one line as a guide to writing. A double line will cramp your movements and impede your progress towards complete control.

These brief and general precepts may sound a little arbitrary. They are not really so. They rest on a sound basis of long-continued observation and experiment, the work of many minds in many lands.

## TWO REPORTS ON THE TEACHING OF FRENCH.

### II.

**T**HIE reports here summarised refer to the teaching of French in London secondary schools and were prepared respectively by the Board of Education and by Mr. Clouderon Brereton, inspector to the London County Council. In the January issue of THE SCHOOL WORLD those sections of the two reports were dealt with that concern the organisation of the teaching, such as the staffing of schools, homogeneity of classes, etc., and the teaching of pronunciation. We now proceed to state the views of the inspectors on other questions of method.

#### Grammar:

The inadequate attention now given in many schools to the claims of grammar well illustrates how the catchwords of controversy are sometimes fated to be so misinterpreted as seriously to damage the cause they were invented to serve. It was no part of the creed of the leaders of reform in modern language teaching to dispute or underrate the importance of grammatical accuracy. Misconception of their intention has led many of their faithful followers to disaster. (Bd. Educ., § 66.)

All pupils alike should have acquired the whole accent and the elements of syntax by the beginning of the third year of instruction. (Bd. Educ., § 70.)

On the other hand, Mr. Brereton says:

In the opinion of the majority of teachers, the third year should be *par excellence* the one devoted to the rounding up of the commoner forms of the general accent, especially of the irregular verbs, with such parts of the ordinary syntax that have already been acquired. To put it earlier would unduly abridge the time devoted to the acquisition of accent and vocabulary. (L.C.C., p. 13.)

[We are inclined here to agree with the view expressed in the Board of Education report. The first two years form the elementary stage,

which the essentials of grammar should be required, together with a moderately large vocabulary. It is more important at this stage that the grammatical knowledge should be sound than that the vocabulary should be extensive. It is because the vocabulary is too large and often ill-selected that many first courses are unsatisfactory. Beginners' books should be carefully built up and self-contained; it is not at all wise to "take an easy continuous text side by side with the book on which the instruction is mainly based" (Bd. Educ., 60). Moreover, if the grammar is to be taught systematically, together with a well-chosen vocabulary, it is necessary to have books specially constructed for this purpose. The premature reading of literary texts is one of the commonest causes of inaccuracy; all depends on a sure foundation.]

Whether the grammar should be in French is a matter to be left to the teacher, and *a fortiori* whether the teaching should be in French should remain a matter of individual option. (L.C.C., p. 13.) It was found, as a matter of fact, that only the exceptionally gifted teacher was successful in the use of a French grammar written in French. (Bd. Educ., 3.)

[No difficulty is presented by the French grammatical terms used in elementary teaching, and there is no advantage in using the English ones; indeed, to introduce them in such sentences is a positive disadvantage. As for explanations of grammatical points, it certainly is sometimes preferable to give them in English; but most features of grammar, at any rate in the early stages, can be easily dealt with in French. A French grammar written for English pupils may be used with profit, when they emerge from the elementary stage, during the first year they may have a written *hier de grammaire* (L.C.C., p. 12).]

Mr. Brereton has a useful section (L.C.C., 17) on the elimination of common errors. He says:

The gradual formation of a "black list" in the various classes of typical mistakes, according as they are first encountered, would do much to keep down the volume of common errors. Such a "black list" would take the form, not of rules, but of typical examples. . . . Each pupil should have his own copy of the list written either on the back of his book or at the beginning of his exercise-book. Moreover, three precautions are necessary in the formation of such tests:—(1) The list should be formed slowly. (2) In each year it should not exceed some fifteen typical mistakes, because while it is possible to keep ten commandments, it is nearly impossible to keep 100. (3) The writing should be neat and legible, and the number of times of writing out should be fixed at a nominal figure, because the test is not meant to be in any way punitive,

but merely to serve as a system of pin-pricks for developing a linguistic conscience on certain points.

The main reason for the compilation of such a list is that the sum-total of the fifteen main errors, owing to their high frequency, represents a very large percentage of the sum-total of the whole. If, therefore, we can largely reduce the rate of their recurrence, we considerably lower the total number of errors made.

But, helpful as this remedy is likely to be, prevention is better than cure. If we want to prevent errors, let us say, in the order of the personal pronouns, the best thing is to use them so often in the correct order that it becomes a matter of instinct to do so; hence the importance of oral drill in elementary grammar (cp. Bd. Educ., § 72 A).

#### Vocabulary:

Both reports commend the compiling of vocabulary note-books (Bd. Educ., § 88; L.C.C., p. 11); the latter also mentions picture vocabularies. Both rightly dwell on the need for periodic and systematic revision. The following warning is judicious:

Mention should be made of two practices which effectively prevent the acquirement of an adequate vocabulary. One is to allow pupils to write the English of French words on the pages of their authors to be read off in their context when a pupil's turn comes and to be forgotten as soon as his turn is over. The other practice is similar and in itself equally futile, namely, to allow the use, during the translation lesson, of a word-list which the class has been required to compile and produce as evidence of preparation. (Bd. Educ., § 90.)

The value of *dictation* is recognised in both reports (Bd. Educ., §§ 91, 92; L.C.C., p. 12). In addition to the conventional form of this exercise which "affords a combined test of sureness of audition, accurate orthography, and knowledge of both grammar and vocabulary," dictation may also serve as a means of instruction—for instance, when there is what Mr. Brereton calls "syncopated dictation," viz. "the excellent practice of reading over a longish piece of dictation, and then asking pupils at the second reading to write down only . . . the verb-forms occurring in the passage dictated, or to direct the exercise exclusively in a similar way to some other series of allied phenomena." Mr. Brereton also refers to the useful device of getting one of the pupils to write out the piece at the same time on a blackboard which the rest of the class cannot see. [It is well to choose one of the best pupils and to lead him to correct his mistakes before the blackboard is shown to the class.]

#### Composition:

While there is nothing strikingly novel in the suggestions for the teaching of free com-

position and of translation into French in the reports (Bd. Educ., §§ 76-86; L.C.C., pp. 16, 17), we welcome the insistence on systematic teaching, on careful preparation, and on conscientious and judicious correction. It is well said that

where a teacher is solely responsible for the whole attainment of any given group of pupils, the number of corrections which it is necessary for him to make in their written work may fairly be said to vary inversely with his efficiency. (Bd. Educ., § 76.)

Teachers here have ready at hand a sure test of the success or failure of their efforts in teaching composition. It is also good to have it stated once more that

the written work, at least in lower and middle Forms, should, as a rule, be done under the eye of the teacher. (Bd. Educ., § 84.)

It is interesting that neither report states when translation into French should be begun. That it should not have a place in the earlier stages may, however, be inferred. Some English sentences for translation were included in the lower test paper set by the Board of Education inspectors at each school to a class of pupils in the second or third term of their third year of French instruction. It is worth recording that

among the girls' schools, one in which the direct method in its purest form was used was at the head of the list with 68 per cent. as average mark, while a boys' school in which the direct method was used almost exclusively was second among the boys' schools with an average of 58 per cent. Further, it may be noted that a test of precisely the same form was set as an experiment to a class of twenty-five twelve-year-olds who had been very skilfully taught on the direct method for three terms only; the marks obtained varied from 65 per cent. to 30 per cent., with an average of 47 per cent. (Bd. Educ., App. iv.)

#### *Reading:*

The instruction is based to a much greater extent than was formerly the case on the French text, and that this is true generally is significant of the advance which has been made in recent years. (Bd. Educ., § 93.)

The main concern is to provide an adequate and progressive course of reading in class with due regard both to language and subject-matter. The books in this course should be read intensively, and, whatever form the lesson takes, the teacher must be satisfied that every pupil in the class completely understands the text. At the same time the importance of acquiring facility must not be overlooked, and it is obvious that the texts selected for rapid reading, to be read largely by the pupil for himself, should be within the ready apprehension of the class as a whole—that is to say, texts well below the standard of difficulty of those read intensively in class. In all his reading the pupil

should early be accustomed to intelligent use of dictionary, which may well be a dictionary wholly in French. (Bd. Educ., § 94.)

As regards the "readers" in use, the proportion of books of extracts is occasionally excessive, and in some schools the list of books for the four years' course might be more literary in nature, though the numerous cheap texts published offer an excellent choice. . . . In any case some Molière, like the first two acts of the "Bohéme Gentilhomme" or the "Médecin malgré Lui," might well be read in the Forms below matriculation. One cannot help regretting that some children present leave school without having ever read a Molière at all. (L.C.C., p. 12.)

In schools where French is not begun before the age of twelve, and where the course in the language does not, as a rule, extend over more than four years, the writers will naturally be representative of modern literature. The older French classics can be studied to full advantage only by pupils who have enjoyed longer preliminary training, and developed to some extent the historic and literary sense. (Bd. Educ., § 100.)

[It is likely that those who take the "First Examination" will be of somewhat lower average age than those who have hitherto taken London Matriculation; and it seems wise to confine their reading to modern authors.]

The Board of Education report contains the sections (93-101) devoted to literature so far as warnings against excessive and unnecessary translation, against the complete exclusion of all translation by teachers who have no real mastery of the reform method, and against slipshod renderings. There is also an earnest plea for the scholarly and precise treatment of the texts read. Mr. Brereton has some valuable remarks (L.C.C., pp. 14-16) on the importance and encouragement of private reading. He has also the following useful suggestions as to the retention of books by pupils :

It would be well if some system could be devised in the maintained schools whereby the pupils became the possessors at least of their grammars and dictionaries for purposes of future study. Children who obtain certain percentage of marks in the yearly examinations might be allowed to retain their books. It is sad to think of their leaving school without a single book available for continuing, if they so desire it, the study of the language. The principle obtains in one or two schools of allowing pupils to buy the books they have used at half-price. This might be extended. (L.C.C., p. 8.)

Both reports contain hints on teaching practice and class management (Bd. Educ., §§ 102-14; L.C.C., pp. 3, 7, 19, 20). These are deserving of earnest consideration. Many of them apply to the teaching of any subject, and many of the suggestions are, as the Board of

education report says, of a quite elementary kind.

But our experience has shown us that the elementary points are often those most apt to be overlooked. Generally speaking, what is most needed is a fuller realisation that the object of the teaching is to get things learned, and to get as much learned as can be well and usefully learned in the available time. Real usefulness in securing the effective assimilation of the imparted instruction and in utilising the available time to the best advantage is a quality the absence of which is a far commoner hindrance to progress than any other deficiency in the teacher's equipment. (Bd. Educ., § 110.)

We regret that limitations of space do not make it possible to reprint these suggestions in full. We must content ourselves with giving the most important in a condensed form :

It is very wasteful to distribute the available time mechanically among the various branches of the work (*e.g.* one period to grammar, one to composition, one to translation, etc.).

Have a short exercise in sound-drill at the beginning of each lesson.

Use the foreign language when uttering the stock classroom phrases, and use the French names of the letters for spelling French words.

It saves time and ensures thorough acquirement if a greater proportion of the lessons than is usual are conducted with closed books.

Make use of English only if you are sure it is indispensable for the testing of full understanding or the economising of time. See that the pupil understands his mistake and repeats the faulty sentence in its correct form.

Do not spend too much time on the individual pupil; let the brighter members of the class correct his mistakes.

Various aids to teaching are indicated, such as attendance at lectures, etc.; the formation of a French "cercle" and a magazine club; to which may be added international correspondence and the exchange of French and English children during the holidays.

The problem of the study of other foreign languages is touched on in both reports (Bd. Educ., App. v.; L.C.C., p. 21). There is substantial agreement on the following points, as stated in the Board of Education report :

(1) No pupil should be allowed to begin a second language unless he is well abreast of his work in the first.

(2) At least one year, and preferably two, should elapse between the beginning of the first language (*i.e.* French in all London schools but one) and the introduction of a second.

(3) The time to be given to the second language should not be less than two and three-quarter to three hours per week, and the time still given to French should not fall below two to two and a half hours.

(4) No pupil should take up a second language unless there is a reasonable prospect that he will remain at school long enough to take at least a two years' course in it.

These principles involve two corollaries :

(a) That there should be in the great majority of schools a group of pupils taking only one foreign language, and that this group should give more attention to French than the rest and receive properly organised instruction in French, and probably English or some alternative subject, during the time allotted to the second language.

(b) In schools where the average length of school-life after twelve is only three years or under, it is very questionable whether a second language ought to form part of the normal curriculum.

The reports contain some important discussions on examinations and scholarships (Bd. Educ., §§ 114-18; L.C.C., pp. 22-24, 27). Some of these deal more particularly with questions specially affecting the London schools; others are of wider interest. It is very judiciously said that

the function of a general non-competitive examination of the Matriculation type can only be to test the pupils' possession of a reasonable minimum of acquirement; it is not, and cannot be, to determine the ultimate aims and define the scope of the course of instruction. (Bd. Educ., § 114.)

We are, however, unable here to deal adequately with the difficult questions raised. Especially in Mr. Brereton's report are there considerations which call for serious thought; in some respects they agree with the views put forward by the Education Reform Council.

The last sections of the Board of Education report emphasise the need for better libraries and other equipment. War economy may be pleaded as an excuse for reducing grants, but it is very doubtful whether this is real economy.

We are conscious that our summary of these reports does scant justice to them; but it will at least give some indication of their value. They contain extraordinarily little padding; they are worth reading right through, and fortunately they are now easily accessible to all modern language teachers. Very little in them has an application limited to London schools. If the two reports were fused into one and a few gaps (above all, a good bibliography) filled in, we should have an excellent little manual for teachers of French; and we owe warm thanks to all concerned in the issue of these budgets of sage counsel and sober criticism.

## HIGHER EDUCATION WITH REFERENCE TO ADVANCED COURSES.<sup>1</sup>

By E. SALTER DAVIES, M.A.  
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**E**ARLY in August of last year I addressed, on behalf of the Kent Education Committee, a letter to the Board of Education containing certain criticisms of the new Regulations for Advanced Courses. This letter was published in the *Educational Supplement of the Times*, and until the appearance of Circular 1,023 a few weeks ago its criticisms remained unanswered. I may say that my conviction that those criticisms were well founded was strengthened by the article on the same topic by Prof. Ripman in the August, 1917, issue of THE SCHOOL WORLD, and subsequent thought and experience have only confirmed my judgment.

While I fully appreciate the engaging frankness and conciliatory tone of the Board's circular, its arguments have left me unpersuaded. In this circular the Board invites "expert criticism and suggestions from all quarters with a view to revision as regards both the scope and contents of courses suitable for recognition and the detailed conditions under which any such course can be recognised." It is a pity that such an invitation did not accompany the first issue of the regulations, and that their enforcement was not delayed until they had been revised in accordance with the criticism and suggestions received.

I do not propose to deal with what are, I think, serious defects in the constitution of the courses. These have been pointed out with clearness and cogency by Prof. Ripman. With his criticisms I am in entire agreement; and, in particular, raise my voice in protest against the unworthy treatment accorded to our own language and literature. My own criticisms will be mainly from the administrative point of view and with reference to the smaller provincial schools.

The most serious objection to the present scheme of advanced courses is that it is applicable in its entirety only to a few of the larger schools in the country. To these the adoption of the new scheme will mean little change in organisation or in curriculum, though the additional grant will, of course, enable the work to be strengthened and improved. Most of our secondary schools are not in the happy position of being able to organise, under the new regulations, separate courses for pupils desiring to specialise in classics, in science and mathematics, and in modern studies. They

have perhaps, even in normal times, some half dozen advanced pupils. The Kent Education Committee, in the letter to the Board of Education to which I have already referred, point out that

the majority of secondary schools of any size or standing already attempt—and, in its opinion, rightly attempt—to give in all the main divisions of the curriculum such instruction as will lead to a university course. The records of the schools show that, in many cases, such attempts have had satisfactory results since candidates from the same school have been successfully prepared for university scholarships in two or three different branches of study.

What will be the effect of the new regulation upon such schools? They will have to choose among three possible courses.

First, they may decide, as the Board apparently desires, that, as it is impossible for them to satisfy the conditions prescribed by the new regulations, they must draft those of the pupils who require advanced instruction, at the age of sixteen or thereabouts, to some large and more fortunate school.

Secondly, many of the small schools may—and in all probability will—decide that they cannot afford to let slip the chance of an additional grant of £400 a year, and will proceed to try to organise an advanced course in one or other of the three groups of studies.

Thirdly, the schools may decide that, in the circumstances, they will do best to ignore the new regulations altogether, and to go on in the future as they have done in the past.

As regards the first possibility, the objection to such a system of transference was stated briefly in the letter of the Kent Education Committee:

Such transference would in practice prove exceedingly difficult and would be attended by grave disadvantages. The school from which the pupils were transferred would suffer through the loss of its leading pupils, who naturally exercise a strong influence over the tone and character of the school, while the pupils themselves would suffer from a change to new methods and to a new environment with which they would not have time to become familiar before proceeding to a place of higher education.

The disadvantage of the system of transference would be accentuated if it were applied to a boys' and a girls' school in the same neighbourhood as is suggested in Circular 1,023. The Board says it is fully conscious of the difficulties and drawbacks incident to any such system of transference. In particular, it says, it is alive to the most important difficulty of all:

the risk that a school's sense of corporate unity may be enfeebled, and that its development may be arrested or discouraged.

<sup>1</sup> From an address to a meeting of the Teachers' Guild on January 5th, 1918.

In spite of this the circular argues that it is not feasible for every secondary school to provide an advanced course, or for a large number of schools to provide more than one such course, and the principle of transfer, while it must be very carefully and consistently applied, is, therefore, essential towards bringing the benefits of advanced courses within general reach.

It adds that

The effective organisation of secondary education in an area is impossible if each school is to be treated as an isolated unit, free to take its own line independently of all considerations except its own efficiency and size, competing and not co-operating with other schools.

It seems to me that there is a hidden fallacy in this argument, and that it is contained in the word "competing." It is assumed that if a school does not co-operate with another school in the transference of advanced pupils it must compete with it. This assumption may be more or less true in certain special cases. It may be partially true in the case of two or more secondary schools which co-exist in the same town. It may contain a fractional element of truth in the case of schools in neighbouring towns, since both may draw a few pupils from the same town or from the same rural parish. It is certainly not true as a general proposition. A secondary school in a provincial town, as a rule, serves a fairly definite catchment area, and in no reasonable sense of the word can it be said to compete with other schools.

The Regulations for Advanced Courses state that the system of transferred pupils may be applied successfully in such special cases. I do not think that they can be so applied generally. Regulations should be made to cover the normal cases and not to meet exceptions. It may be argued that the advanced pupils from the smaller schools can be transferred to advanced-course schools by means of boarding scholarships. This experiment is likely to be useful only in a limited degree. In the first place, many parents will be unwilling to send their sons and daughters to boarding schools, and there can be no doubt that during recent years the day school has immensely increased in popularity and in prestige. In the second place, local education authorities will, I think, be reluctant to undertake the expenditure which would be involved in arranging a scheme of boarding allowances on any large scale, and to face the many exceedingly difficult problems which would arise in connection with it.

The statement that our secondary-school system can be organised effectively only if the schools co-operate with one another is, of course, true. The assumption that the smaller

schools can take their place in an organised scheme only by transferring to other schools their more advanced pupils is unwarrantable.

I think that the Board of Education has felt irresistibly attracted by the suggestion that an advanced-course secondary school should bear the same relation to an ordinary secondary school as a central elementary school bears to an ordinary elementary school.

Susceptibility to the seductions of logical but impracticable theory is the last infirmity of official minds. The analogy between a secondary school with an advanced course and a central elementary school is, I believe, wholly misleading. Every secondary school is already a central school with its own place in the educational scheme and serving a definite area, the size of which is determined by the facilities which exist within it for getting to and from the centre. To push the central school idea further than this is to leave the solid ground of common sense and practical experience for fantastic theory.

The proper line of progress is, I submit, to be found, not in narrowing and specialising the curricula of our secondary schools, but in giving the schools the assistance they require in order that they may develop themselves along their natural line of growth. It was with this object in view that the Kent Education Committee asked that the Advanced Course Regulations might be revised

so as to make a portion of the new grant available for the purpose of encouraging advanced work in those schools which, owing to the small number of pupils who remain after the age of sixteen, find it difficult in present circumstances to make satisfactory arrangements for their instruction. The grant to these schools might be paid on a capitation basis upon all pupils who have passed an approved qualifying examination and are receiving a continued course of instruction under conditions which are satisfactory to the Board.

The Board, in its circular, says that it regards two principles as essential in the recognition of any advanced course.

First, it

must provide continuous, coherent, and systematic instruction in a group of studies which have organic unity.

To this principle no exception can be taken, although there is room for difference of opinion as to what constitutes organic unity.

The second principle is that the course must be taken in common by pupils working together as a class, and sufficient in numbers, regard being had to the size and circumstances of the school, to justify special staff aid.

This principle is more questionable. Much, however, depends upon its interpretation. At

present the Board seems to regard eight or ten as the minimum number of pupils which can be said to constitute a class, and holds that each year of the course must be taught as a separate class. This means, I take it, that there must be at least sixteen or twenty pupils in the two years of the course! With this interpretation of the principle I am disposed to quarrel. It is easier to organise a course for twenty pupils than for ten, and, generally speaking, there is greater competition, and therefore more stimulus, where ten pupils are working together than where there are only three or four. Nevertheless, I am convinced that the difficulties and drawbacks which, as the Board admits, are inherent in the system which it advocates are so serious as to outweigh the advantages. Some of the best and keenest work I have ever seen has been done, both in secondary and in technical schools, with groups of three or four advanced students. The policy of the Board, as it seems to me, should be directed towards strengthening and improving the advanced work in all schools which are already reasonably staffed and equipped, small schools as well as large, and without laying any great stress upon the present number of advanced pupils.

The second possibility which I suggested was that the smaller schools may refuse to transfer their advanced pupils, and endeavour themselves to organise an advanced course. In this event there will necessarily follow the result stated in the letter of the Kent Education Committee, namely :

The establishment of a bias in the school towards the particular group of subjects selected. The pupils would naturally regard those subjects as being of supreme importance, while the headmaster would be tempted to use his influence to persuade pupils to specialise in them rather than in others. The temptation would be all the greater in cases where there was danger of an established advanced course failing to obtain renewed recognition owing to an actual or anticipated reduction in the number of senior pupils.

Moreover,

in several cases the Board will doubtless require as a condition of recognition the appointment of a new specialist teacher. Even among those schools which have a reasonable number of pupils desiring advanced instruction in the same group of subjects many will hesitate to make such an appointment owing to the impossibility of ensuring in future years the continuance of a supply of pupils desiring to specialise in those particular subjects.

If such specialists are once appointed, it is inevitable that strong pressure will be put—consciously or unconsciously—upon older pupils to take up the particular branch of study which has been recognised. If—in spite of all

—the supply of such pupils fails, what will the position of the specialist teachers?

I can think of few developments more undesirable than this forced and unnatural limitation and distortion of the curriculum in our schools in order that a share in the grant may be secured.

Thirdly, it is probable, as I have suggested, that many of the smaller schools will reject between the alternatives I have discussed, and that they will decide to ignore the new regulations, and to continue their attempt to provide, as best they can, for the needs of their own advanced pupils.

We must all agree with the Board so far as to admit that the present arrangements are not satisfactory. Under present conditions it is impossible for most small schools to make really satisfactory arrangements for advanced work. The reason for this is, I believe, as a rule, not lack of teaching or of organisational power, but inability, through want of funds, to use that power to the best advantage. It would be a lamentable thing if the smaller schools are to reap no benefit from the increased grants which have been supplied in order to make good the present inadequacy of our arrangements for higher secondary instruction. The larger schools are already fairly capable of organising satisfactory courses of advanced work. They are to have increased assistance. The smaller schools even in normal times had the greatest difficulty in doing this. These are to have no help. It must be remembered that their position generally has been, not bettered but worsened, by what is called the "Fishmonger grant," since the new salary scales, as they mature, will more than absorb the increased grant.

Moreover, while all secondary schools feel the boys are badly hit by the war, both by loss of staff and of older pupils, it is the small schools which feel the pinch most acutely. They are struggling to maintain their post-matriculation work for the few pupils that remain, and need assistance more than ever they did. They ask for bread, and it is given to their more prosperous neighbours. In framing these regulations the Board appears to have acted on the principle embodied in the text : "To him that hath shall be given, and from him that hath not shall be taken away even that which he hath."

Finally, I suggest that the Board is showing some want of discretion in the manner in which it is administering the Advanced Courses Regulations. It appears to be acting upon the assumption that, since it finds the money for the advanced course, it is its business to define in the closest detail the conditions upon which the grant shall be made. It is for the Board

assign the exact number of teaching and study periods which are to be allotted to each subject, to decide the academic qualifications, and even to fix the salaries of the teachers who give the instruction. In dealing with such matters it seems to me that the Board is in danger of interfering with the powers both of the headmaster and of the governing body, and I view the innovation with dislike.

Education authorities have recently been engaged in arranging new and improved salary scales—not before these were needed. If an inspector of the Board is now to assume power to say that Mr. A or Miss B is to receive a salary of  $x$  pounds this year, and of plus  $y$  pounds next year, a state of chaos will be produced, and the best-laid schemes of the authorities will "gang agley." For my own part I am not prepared to admit that a teacher in the lower or middle school should necessarily receive a smaller salary than a teacher who takes advanced work. I have a good deal of sympathy with the contention of Mulcaster—that the teachers of the junior Forms require the greatest skill and should be paid the largest salaries. In any case, I submit that these are problems which can be dealt with properly only by the governing body of the school, and do not come within the competence of the Board of Education.

In the county of Kent a rumour has gone abroad that the advanced courses are to be directly controlled by the Board of Education, and that the teachers engaged in such work will cease to be servants of the governing body or of the local authority, and will be directly responsible to the Board of Education. This rumour is, of course, absurd, but it is significant that it should have been raised, and that it should, apparently, have gained considerable credence. It is the duty of the Board of Education to lay down the general conditions which will qualify for the advanced course grant, and to satisfy itself that the syllabuses are adequate, the time-table suitably arranged, and the teaching staff competent. These are the limits of its control as regards not only the advanced course, but also all work which comes under its purview. Why should these limits be overstepped in regard to advanced courses? And, if they are to be overstepped in one part of the school, how long will it be before the same policy is followed throughout?

In certain cases the Board has shown a disposition to insist that in order that recognition of an advanced course may be obtained the whole of the grant, £400, must be spent upon it. Such a condition merely tends to encourage uneconomical expenditure. Underlying all such procedure, as it seems to me, is

the mistaken assumption that an advanced course is not an organic part of the school, but an accretion subject to different laws.

I am very far from suggesting that there is a deliberate attempt on the part of the Board to supersede the authority of education committees. Mr. Fisher claims that the tendency of the Board

has been consistently in the direction of dispensing with meticulous control and devolving more responsibility on local education authorities and giving them greater freedom.

I readily admit that this claim is fully justified, but it seems to me that there have been indications of a regrettable lapse from this ideal of conduct.

If the policy of the Board of Education were continued on the present lines it would, I believe, go far to destroy what I regard as the most blessed feature in our English system of education, the absence of any sort of artificial uniformity imposed upon it from above.

From an educational system of mechanical regularity, of which every detail is prescribed and controlled by Authority, good Lord, deliver us!

#### PERSONAL PARAGRAPHS.

**D**R. BUTLER, the Master of Trinity, died in his eighty-fifth year on January 14th. His death is a great loss to all workers in education. He was a distinguished member of a family of distinguished scholars. From Harrow he went to Trinity, where he carried everything before him. He secured, among other prizes, that for the Greek ode, for Latin essay, the Camden medal, and the Porson Prize. He was senior classic in 1855. At twenty-six he succeeded Dr. Vaughan as headmaster of Harrow, a position his father held from 1805 to 1829. His twenty-six years' rule over Harrow saw many extensions and developments of the famous school, and during that time old Harrovians raised £1,30,000 for their *alma mater*. In 1886 he became Master of Trinity; and until the other day "the most patriarchial figure in English academic life"—as the *Times* describes him—worked in this capacity. One of his sons, Mr. J. R. M. Butler, now holds a staff appointment under the Director of Military Operations; another, Lieut. G. K. M. Butler, died on active service in July, 1916; and a third, Mr. N. M. Butler, who was visiting Germany in August, 1914, is a prisoner there.

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**LIEUT. H. B. RYLEY**, Suffolk Regiment, was killed in France on December 15th last. Mr. Ryley was educated at St. Olave's Grammar School, and Exeter College, Oxford. He then

became a master at his former school, at which he remained until he was appointed headmaster of Sandwich Grammar School. Later he held for some years the headmastership of Emanuel School, Wandsworth. While in the States he heard of the death of his two sons at the front. He at once hurried to England, and, having formerly held a captaincy in the O.T.C., obtained a commission in the Suffolk Regiment. Mr. Ryley, while at St. Olave's, was an active member of the Assistant-masters' Association, in which he made many friends; his was, indeed, a most attractive personality, and many are the men who sincerely regret the tragedies of his life and mourn the loss caused by his early death.

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LIEUT.-COLONEL HUBERT PODMORE, D.S.O., Northampton Regiment (attached to the Middlesex Regiment), was accidentally killed on active service on December 31st last. Mr. Podmore, on leaving Oxford, accepted a mastership at his old school, Rugby, became an officer in the O.T.C., and obtained a commission on the outbreak of the war. A Rugby colleague writes: "Nobody has ever made goodness more attractive, and there was a noble simplicity about him, a complete absence of egotism, which made his very strength seem like some form of gentleness."

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LIEUT. F. D. PURSER, R.N. Division, was killed on December 27th last. Mr. Purser was educated at Mr. Thring's, Haywards Heath, and at Uppingham. After leaving Cambridge he held a mastership at Osborne, and in 1914 joined the staff of Haileybury. The headmaster writes: "Mr. Purser was a schoolmaster of the very first rank. His keen intellectual interest, his vigorous presentation of his subject, and his acute criticism made him a remarkably successful teacher of history to Sixth Form boys. . . . Those who knew him and loved him—and they were many—will cherish the memory of a nature singularly strong, simple, and sincere."

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THE death is announced of Mr. Philip Wood, for thirty-five years headmaster of Darlington Grammar School. Mr. Wood was a governor of the Darlington Girls' School and also of the Darlington Technical College, and had been associated with all the educational developments which have taken place—and they were many—during his long residence in the town. He was president of the Headmasters' Association in 1910.

\* \* \*

EDUCATIONISTS were represented in the New Year Honours by Lord Hugh Cecil and Sir Henry Craik, both of whom represent

universities in Parliament; by Messrs. James Campbell, chairman of the North of Scotland College of Agriculture, George Lunn, chairman of the Newcastle Education Committee, and H. M. White, treasurer of Southampton University College; and by Profs. J. R. Dunstan, Agricultural College, Wye, and J. M. Jones, Bangor, and Dr. W. H. Hadow, Armstrong College, Newcastle. The list of additions to the Order of the British Empire included Messrs. A. T. Davies, Honorary Director of the Prisoners of War Book Scheme, and H. E. Fass, a senior examiner of the Board of Education, Prof. T. B. Wood, of Cambridge, and Mr. James Young, senior instructor in science at the Royal Military Academy.

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MISS RETA OLDHAM, a former president of the Headmistresses' Association, who has been acting as chairman of the Headmistresses' Committee for inspecting girls from secondary schools for employment at the War Office becomes an Officer of the Order, as does Miss Penrose, the principal of Somerville College Oxford. Miss Edith Clarke, teacher of domestic subjects at the National Training School of Cookery, becomes a Member of the Order.

\* \* \*

MRS. BRYANT, who has been headmistress of the North London Collegiate School for Girls since 1895, is retiring at the end of the summer term. Mrs. Bryant succeeded Miss Frances Mary Buss, with whom she had worked as mathematics mistress; the school has had therefore, only two headmistresses since its foundation in 1850. In a short paragraph it is impossible to give an idea of the extent and influence of Mrs. Bryant's educational work or of the esteem in which she is held in the literary and scholastic worlds. Mrs. Bryant was born in Ireland and received her early education in Dublin; she then came to England, attended Bedford College, and graduated with mathematical and moral science honours at London in 1881; three years later she was the first woman to take the degree of Doctor of Science. At the age of nineteen she married Dr. Bryant, of Plymouth, and after his death a year later, became mathematics mistress at the North London Collegiate School. Such are a few of the facts relating to the life of a remarkable woman who has had a powerful and lasting influence on education, especially of women. A biography from a sympathetic hand will be of great interest and of incalculable value.

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THREE masters in the service of the London County Council have been doing good educational work during their internment as

ilian prisoners of war at Ruhleben Camp. Gourvitch gave a considerable number of sons in English up to July, 1915, for the part as individual tuition. Since then he has taken a class in elementary French and the English class preparing for the London Matriculation. Mr. George Walker joined the staff of the mathematical department of the Camp school in September, 1915, and has taken twice a week a class consisting mainly of marine engineers. Mr. A. Wechsler lectured from time to time on various subjects, mostly scientific; from the beginning of 1916 he has been two lessons a week on physical and inorganic chemistry! The Education Committee has agreed that the work of these gentlemen at the Ruhleben Camp will be noted for future reference.

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MR. SYDNEY JONES, formerly headmaster of Heltenham Grammar School, and now a master at Manchester Grammar School, has been appointed headmaster of Barnstaple Grammar School in succession to Mr. H. G. Abel. Mr. Jones was educated at Christ's College, Brecon, and Christ's College, Cambridge, and is the author of several valuable text-books of school mathematics.

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THE Rev. R. W. Clarke, headmaster of Market Bosworth Grammar School for the past three years, is to succeed Mr. H. S. Cooper as headmaster of Lichfield Grammar School. Mr. Cooper has held the office with distinction for some twenty-five years. Mr. Clarke is a graduate of Oxford, was formerly Sixth Form master at Queen Mary's School, Walsall, a master at King Edward's High School, Birmingham, and second master and housemaster at King Edward VI. School, Stratford-upon-Avon.

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THE Lord Mayor of Newcastle recently presented a cheque for £450 to Father Mann, who is leaving the headmastership of St. Cuthbert's Grammar School, Newcastle, to become rector of Bede College, Rome. Dr. Mann went to Newcastle in 1886 from Ushaw College, and in 1890 succeeded to the headmastership of St. Cuthbert's. Since then he has made a great contribution to the educational position of the city.

\* \* \*

SOUTHPORT is facing its educational problems in an eminently practical way; it has appointed proved educationists as chairman and vice-chairman of the Education Committee, and it has now appointed as Director of Education Mr. William Allanach. Mr. Allanach is a man of wide experience in education; he has been engaged in elementary

schools, secondary schools, technical schools, and the Sheffield University. At the University he taught students from the Sheffield Training College for Teachers. He holds a science degree of both Sheffield and London Universities and is the author of "Elementary Experimental Magnetism and Electricity." Since 1907 he has been at Southport, where he has organised the evening continuation classes.

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MR. A. C. BADCOE has been appointed assistant-secretary to the Norfolk Education Committee, in succession to Dr. A. E. Ikin. Mr. Badcoe was headmaster of the Bridport Secondary School and Pupil Teachers' Centre, 1905-6; he has since been assistant-secretary to the Dorset Education Committee.

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MR. A. HIBBETT, formerly inspector of schools, has been appointed secretary to the Education Committee of the Walsall Town Council. Mr. T. A. Picken, headmaster of Palfrey School, has been appointed inspector of schools.

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THE meetings of the I.A.H.M. were perhaps not quite so well attended as those of last year. Mr. W. G. Rushbrooke, the incoming president, in his presidential address, showed the high ideals that he keeps before himself, his school, and his colleagues in the association. Sir John McClure once again proved that a headmaster may retain his keen sense of humour, and that matters educational gain, rather than lose, by a lighter touch than that with which they are usually handled. The conference habit, once acquired, is apparently not easily broken. At the meetings of the headmasters were to be seen men formerly prominent in the Association of Assistant-masters; some were in charge of resolutions and others are officers of branches. Among them were Messrs. Coxhead, Greene, Cholmeley, and Charles, formerly chairmen of the larger association, Messrs. Rouse and Jemmett, secretaries, and Messrs. Sharples, Dazeley, Norwood, and Hensman.

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AT the annual general meeting of the Assistant-masters' Association it was a great pleasure to hear the retiring chairman acknowledge that he was in better health at the end than at the beginning of his year of office. Strenuous work evidently agrees with him, fortunately for his association. The association is to be congratulated in having Mr. G. D. Dunkerley, of Watford Grammar School, a former chairman of the association, for its new honorary secretary. Mr. Dunkerley has already done yeoman service for the associa-

tion and might reasonably have sought a sphere of less arduous labour than its secretaryship. He is a member of the Departmental Committee on Scales of Salaries at the present time.

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AT the many meetings early in January there was much talk of Alec Waugh's "Loom of Youth." Quite a popular pastime was the search for the originals of his characters; there was even a certain amount of unanimity as to an ardent reformer who shares many characteristics with Ferrers.

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MR. W. B. STEER, a past president of the N.U.T., has been chosen by the union as one of their six candidates at the next general election. He will stand as a Labour man, and a constituency will be found for him in consultation with the heads of the Labour movement.

ONLOOKER.

## RECENT RESOLUTIONS ADOPTED BY ASSOCIATIONS OF SECONDARY-SCHOOL TEACHERS.

### ASSOCIATION OF HEADMASTERS.

(1) THAT this association desires to express its regret at the withdrawal of the Education Bill of 1917, and to urge the Government to secure the passage into law at the earliest possible date of the Bill now promised in substitution for that measure.

(2) A resolution welcoming the appointment of the Departmental Committee on Scales of Salaries, and declaring the opinion that an essential requirement for educational progress is the adoption of adequate scales of salaries for both head- and assistant-masters.

(3) (i) That admission to a university should be granted to all who show (a) evidence of general education, and (b) evidence of ability to pursue a particular course of study at the university.

(ii) That as evidence of general education the university should accept a certificate awarded on the results of a "first examination" of the type described in Circular 849 of the Board of Education.

(iii) That as evidence of ability to pursue a particular course of study the university should accept either (a) a "pass with credit" in the appropriate subjects in the "first examination," or (b) satisfactory proof that the requisite standard has been attained in some part of a "second examination" of the type described in Circular 849.

(iv) That professional bodies should be urged to accept as the equivalent of their own preliminary examination a certificate awarded on the result of a "first examination" of the type described in Circular 849.

(4) All secondary-school units, whether O.T.C. or cadet corps, should be brought into a single organisation under the War Office; and the association protests against any attempt to induce secondary-school cadet corps to become affiliated to the Volunteer Force.

(5) Resolutions were passed reaffirming general approval of the proposals outlined in the report of the Departmental Committee on Pensions, and hoping that measures would be taken to bring the suggested scheme into force at an early date; pressing upon the Board of Education the necessity in the superannuation scheme of making some adequate allowance in case of breakdown at an early stage in a teacher's career, and also of making special provision for the teachers who may have had long periods of service in secondary schools before the scheme comes into force; and expressing the opinion that pensionable service should be past service given in any school which is now in receipt of grant, or recognised as efficient by the Board of Education.

### ASSOCIATION OF ASSISTANT-MASTERS.

(1) That this association, having in mind the ultimate welfare of the nation, expresses its general approval of the Education Bill, and therefore regrets the delay of its consideration by Parliament.

(2) That in order to attract into the teaching profession a sufficient supply of men and women of the right type, it is of fundamental importance that national minimum salary scale should be compulsory in all secondary schools receiving State aid.

(3) That the representation upon the Secondary School Examinations Council accorded to teachers engaged in secondary schools is quite inadequate.

(4) That this association protests against the action of certain local education authorities and of governing bodies in proposing to divert part of the supplemental secondary-school grants from educational purposes to the relief of the rates.

(5) That this association (i) reaffirms its general approval of the recommendations contained in the report of the Departmental Committee on Superannuation of Teachers; (ii) hopes that steps will be taken to bring the suggested pension scheme into operation at an early date; (iii) desires to press upon the Board of Education the necessity for:—(a) Increase in the proposed breakdown allowances, particularly in case of breakdown at an early stage in the teacher's career; (b) special provision for augmenting the proposed pensions of existing teachers, who have had long service in secondary schools, prior to the inauguration of the scheme; (iv) is of opinion that past service in a school which is now in receipt of grant, or recognised by the Board of Education, should be regarded as pensionable service.

### ASSOCIATION OF HEADMISTRESSES.

That this meeting of the Association of Headmistresses, held in connection with the Conference of Educational Associations, January 4th, 1918, strongly urges on the Government the great national importance of proceeding at the earliest possible date with Mr. Fisher's promised Education Bill.

### ASSOCIATION OF ASSISTANT-MISTRESSES.

(1) That the A.A.M. considers that assistant-mistresses should be able to retire at the age of fifty-five, and that the insurance policy should be available at that age.

(2) That this meeting is of the opinion that equi-

work demands equal pay and that there should be no differentiation in the pay of men and women on the ground of sex.

(3) *Scheme of Salaries for Assistant-mistresses.*—(i) Minimum initial salary of mistress with university degree, or its equivalent, and training (without experience), £150; (ii) minimum initial salary of mistress with honours certificate of the Cambridge Higher School, or any other equivalent certificate, and training (without experience), £120 (in all cases a higher initial salary should be given if the mistress has had experience); (iii) the rate of augmentation should be £10 per annum, up to a minimum of £180 for non-graduates, £250 for graduates. In all cases of entirely satisfactory service, salaries should continue to rise, a minimum of £220 for non-graduates and of £300 for graduates. The salaries of assistant-mistresses occupying positions of special responsibility should be on a still higher scale. Teachers of special subjects, e.g., art, physical training, domestic economy, should be on scale (i) or scale (ii), according to their qualifications.

## SOME TOPICS AT THE JANUARY CONFERENCES.

### DANGERS TO EDUCATION.

On New Year's Day the President of the Board of Education gave an address to a conference arranged by the Teachers' Christian Union. He referred to two dangers to education, indifference and the natural desire of eager spirits to exploit education for specific ends. There is not a retired colonel at Bath or Cheltenham who has not framed his vision of the kind of citizen who should be supplied by the public elementary schools to the Empire upon whose shore the sun never sets. A smart, strapping young fellow, quick to the pulse, with a sound knowledge of Navy League literature, and able to place the British Colonies on the map! Other ideals, other counsels. "We must," said Mr. Fisher, "rid ourselves of the fallacy of the particular end if we are to do any good in education. We do not deny that it is possible to put a stamp upon a generation by the powerful impress of an educational machine, incessantly ascending on the same point and with the same momentum. The Germans appear to have done something of the kind. Their education is, indeed, not what it is portrayed to be by lusty orators in the House of Peers and the House of Laymen. It is not undenominational or irreligious, but very much the reverse. Nor is it conspicuously materialistic, seeing that it assigns a larger place to the study of classical antiquity than is accorded in England. But it is political, and governed by a theory of statecraft, served by an army of State teachers, and dominated by the overshadowing and universal obligation of military service. Such a system of education, framed in the spartan mould, with a constant view to the stern extremities of war, is capable of producing great feats of social coherence in times of patriotic stress. We must not underrate its virtues because it does not convert a savage into a saint, for it is those virtues which make Germany so formidable and tenacious an oppo-

nent. But the German system is open to one grave objection. It is blighting to the spirit of English liberty, and for this reason we may safely predict that slips from the German tree will never flourish on English soil. In our English view it is not the business of a public system of education to manufacture opinions. We are content to leave that branch of the trunk to the German Emperor and to the Central Labour College. What we can and should do is to give to young people some impression of the wealth and splendour of the spiritual inheritance which belongs to them as members of our nation, to train them to acquire knowledge, to weigh evidence, to think for themselves justly, temperately, and wisely, and to keep their faculties of self-criticism alive."

### THE SCHOOLMASTER'S IDEAL.

In his presidential address to the Association of Headmasters, Mr. W. G. Rushbrooke said it is not likely, or even desirable, that education will ever assume the guise of an exact science. Authoritative experiment is impossible in the sense known to the man of science. The same experiment cannot be tried twice on the same group, since the individuals have changed in the interval. In the main, education is an art and proceeds by experience, by common sense, by fortunate conjecture, by the love of beauty and goodness, by sympathetic insight, by the fascination of creative work, by the sense of its transcendent issues—all conditioned in their working by the special circumstances of the school and by the personal aptitudes and correspondences of teachers and taught. However unpromising the capacity of the pupil may seem, the teacher must be no perfunctory artisan working in the mercenary spirit of the hireling, but an artist fired by reverence for his material, joyfully conscious of the dignity of his trust, lavishly spending himself for the sake of the children, and following them as best he can with an unforgetful interest in their after-life. So shall he be blessed in his work and find increasing rewards as the swift years go by. Already we are beginning to hear the suggestion that continuation schools and secondary schools must seek to justify themselves by giving a vocational training. To this we may reply that our duty is so to equip our pupils that they may bring intelligent and alert minds to their work, whatever it may be. To this end we shall have due regard to the importance of making our teaching serve to interpret the outside world, but we shall not betray our trust by pretending to train experts in business or industry. The time of youth is marked by strong emotions and a passionate desire to know the reason of things. Hence it is, above all others, the period of life when right impressions can be formed and just relations established. This twofold process demands that we shall not exclude either literature or science. In one we have the story of the created universe; in the other the record of the thoughts of men. Both are essential to a just conception of life. The world of things—vast and wonderful as it is—has no meaning for us until the thought of man has shone upon it. And in their turn these thoughts become themselves a part of the phenomena of the world, preserved in literature or history, not to be excluded or

disparaged, since they, too, are constantly operating as forces in the lives of men. Our plea is that education shall have an acknowledged unity of purpose; that it shall be directed towards the building up of knowledge, not as a mere possession or as an aid to material wealth, but as a means of interpreting life and of learning how the best life may be lived. In other words, education is the framing of ever closer links.

"Betwixt us and the crowning race  
Of those that, eye to eye, shall look  
On knowledge."

#### THE SUPPLY OF TEACHERS.

Mr. H. P. Lunn, the retiring chairman, in his address to the Assistant-masters' Association, emphasised the fact that our greatest national need is now more than ever an efficient system of education. We have seen the production of many schemes of reform; we are on the eve of a great forward move towards better organisation and higher efficiency in our national education. But we are far from a solution of the most pressing of all our difficulties, the training and the supply of teachers. The cardinal factor governing the efficiency of any educational system is the teacher. The necessity for improving the status of the teacher, so long urgent, is now the most essential need; to give to the profession that status which it should enjoy, conditions of service must be such as to make it worth while for a man deliberately to choose teaching as his profession in face of the competition arising from other callings. A *sine qua non* to entrance to the profession should be qualification for the Teachers' Register, enrolment on which will soon necessitate a course of professional training. Our policy as to training is definite. We believe that the intending teacher should first live the ordinary life common to university students and take his degree, and afterwards undertake a course of specific training for his profession. Hitherto the State has not provided grants for training to the intending secondary-school teacher similar to the training grant for elementary-school teachers. Personally, I hope that no such grants will be provided. I suggest that the remuneration to which a man can look forward should be such as to make it worth his while to fit himself for the profession without any grant from either the State or the local authority. I feel that the profession would lose in dignity and prestige by the adoption of a system of grants such as I have mentioned.

#### ADVANCED COURSES IN SECONDARY SCHOOLS.

In Circular 1023 the Board of Education has set out the principles on which the provisions for advanced courses under the regulations for secondary schools have been framed, together with a statement of the progress already made, and notes on certain doubts or difficulties which have arisen. The Circular is here summarised:—

Up to the middle of November last between 270 and 280 applications for recognition of advanced courses had been received. Of these the greater number came

from schools in large urban centres. The geographical distribution of the applying schools is uneven, as there are large areas from which no applications have been received. About half the applications were in respect of courses in science and mathematics; of the remaining half, those for courses in classics were less than one-third of those for courses in modern studies.

Up to the same date, sixty-three courses in science, thirteen in classics, and nineteen in modern studies have been recognised. Nearly fifty were still undetermined. In the remainder (about 130) recognition was withheld, because the syllabus of instruction submitted was unsatisfactory, or because it was not shown that it could be satisfactorily carried out, or because a reasonable number of pupils qualified to enter on the course was not forthcoming. The proportion of refusal was by far the largest among modern studies courses. This is due partly to the fact that this type of course is more of a new departure than the other two, being more largely to failure on the part of school authorities to grasp fully either the meaning of advanced work, or the principle of coherence, in such a course.

The Board regards two general principles as essential. These are that an advanced course (1) must provide continuous, coherent, and systematic instruction in a group of studies which have organic unity, and (2) must be taken in common by pupils working together as a class, and sufficient in numbers, regard being had to the size and circumstances of the school, to justify special State aid. In other words, the regulations are not meant to encourage either "fancy courses in an arbitrarily selected collection of disparate subjects, or courses, however good in themselves, followed by one or two individual pupils only. Further, not only should the bulk of the school time of the pupils concerned be assigned to the group of subjects taken as the advanced course, but the substantial nucleus of instruction given in that group should be the same for all the pupils following the course.

Representations have been made to the Board that in the groups as defined no sufficient recognition is given to such important subjects as English language and literature, geography, art, civics and economics, commerce, and domestic subjects. These representations are being carefully considered. But for the present what is most needed is concentration. Any substantial multiplication or subdivision of the three types of course now recognised would be attended by serious risk. Of these other subjects some, such as geography, may be, and should be, provided for within or in connection with one or other of the three recognised groups, while others, so far as specialised or intensive study is concerned, are outside the proper scope of secondary-school work. Further, considerable latitude is allowed in science and in modern studies courses as regards the choice of constituent subjects, and the relative importance given to each; and the syllabuses of courses already recognised show large variations.

In the preparation of syllabuses for proposed courses, especially in modern studies, proposals have been submitted which have had to be rejected or referred back for substantial amendment on the ground that they

not embody the principle of coherently grouped studies. A very common fault is the absence of any attempt at correlation of history with the period of modern literature chosen for special study. It is not required that all the subjects in the group should be carried up to the same standard. Predominance may be given to history, or to two languages, or to history and one language, so long as organic connection between history and literature, as well as strict linguistic study, is secured. One language must be carried up to the standard at which it can become the basis of history and literature; in the other, a lower standard of proficiency may be accepted. From the study of history that of geography is, of course, inseparable. Special importance is assigned in the regulations to the maintenance of work in English by pupils following an advanced course. Proficiency in English is essential both as the basis and as the instrument of all advanced studies, and of their effective use in later life. Adequate attention should therefore be paid to it in connection not merely with a modern studies course, but also with an advanced course of any type. While a share of school time directly given to it will be limited, much valuable work may be done out of school hours by systematic and exact reading, properly selected, supervised, and tested.

Some schools can organise two, or even three, advanced courses; but in many others the effective organisation of more than one will not be practicable. The establishment of such a single course will tend to give a particular impress to the scope of the whole school work. But it need not, and should not, follow if the range of the curriculum will be unduly restricted or that premature specialisation will be encouraged.

While the education of girls should be in no way inferior to that of boys, the educational requirements of boys and girls, like their capacities, are not identical. Girls' schools, though their curricula are largely (perhaps too largely) modelled on those of boys' schools, have characteristic features which call for special treatment. Such subjects, for instance, as art and housecraft may, where conditions are suitable, be properly taken as subsidiary subjects. This is a matter to which the Board is giving careful attention. It is not the intention of the Board that any part of the advanced course grant shall be devoted to remission of fees or provision of maintenance allowances. The grant is meant to secure the efficient staffing, equipment, and conduct of the advanced course itself, and effective preparation for it throughout the school. The first and most important object is the adequate remuneration of the teachers concerned.

The Board is fully conscious of the difficulties and drawbacks incident to a system of transferring pupils from one period of school life from one school to another. These may include, besides the minor consideration of loss of grant in respect of the transferred pupils, removal from the school of specially proficient pupils who are the school's own product and exert a good influence in it; and, most important of all, the risk that a school's sense of corporate unity may be endangered, that its development may be arrested or dis-

couraged, and that it may find difficulty in creating within itself the nucleus of an advanced course. But the Board is glad to note instances in which a headmaster, taking a large and generous view of the position of his school in a wider system, has expressed the desire to transfer his own best pupils to a school where their needs can be more effectively met. The effective organisation of secondary education in an area is impossible if each school is treated as an isolated unit, free to take its own line independently of all considerations except its own efficiency and prestige, competing and not co-operating with other schools.

No minimum number of pupils has been prescribed as the "reasonable number" required; the number must be reasonable having regard to the circumstances of each case, and there must be the prospect of a steady and continuous supply of qualified pupils. Where there are few or no pupils ready to take the second year of the course forthwith, there must be sufficient assurance that those entering on the first year will proceed to complete their course in the second year. The grant is made for maintenance of a course actually taken by a number of pupils amounting substantially to a class; it is not given merely in order to enable a school to work up towards the creation of such a class at some future date.

The Board recognises that the organisation of advanced courses has been attended by special difficulties, both from the depletion alike among teachers and among older pupils due to the war, and from the shortness of the time between the issue of the regulations and the commencement of the current school year. The Board is convinced, however, that it was right to proceed in the matter, even though experimentally, at once. A large number of advanced courses are already recognised and in full working; and the practical experience now being gained will be of the greatest service in the future.

### THE EDUCATION BILL.

MR. FISHER introduced his new Education Bill in the House of Commons on January 14th under the ten minutes' rule. So far as its educational provisions are concerned, it does not differ from the Bill of August last, but the new Bill introduces modifications of the administrative clauses to meet criticisms raised by education authorities. It is confidently hoped that the changes which have been introduced have rendered the Bill non-contentious, and that it may prove possible now to secure its passage into law early next session.

In his speech Mr. Fisher said the new Bill is substantially identical with the former. It imposes upon the councils of counties and county boroughs the duty of providing for all forms of education. It abolishes exemptions from school attendance between five and fourteen years of age. It provides for further restrictions upon the industrial employment of children during the elementary-school age, and for the gradual introduction of a system of compulsory day continuation classes for adolescents. In the new, as in the old, Bill local education authorities are empowered to

give assistance to nursery schools, and in other ways to help the physical and social welfare of the children committed to their charge. Indeed, attention to physical welfare is a special and distinctive note of both Bills.

On the other hand, certain of the administrative clauses have either been omitted or amended. A new clause has been introduced in place of Clause 4, which provided the machinery and procedure for the approval or disapproval of schemes. Clause 5, which provided for provincial associations, has been omitted, and in Clause 6 provisions which will facilitate the federation of local education authorities for certain purposes, which was the governing principle of Clause 5, have been embodied. Clause 29, which provided the procedure for the transfer of the powers of non-county boroughs or urban districts to the county councils, has been omitted. A new revised clause has been substituted for Clause 36, which dealt with public inquiries. Clause 38, which dealt with the reference to the Board of Education of certain educational questions, has been omitted. For Clause 40 a clause dealing with grants, and providing more specifically for a deficiency grant in aid of education in those cases where the substantive grant does not amount to 50 per cent. of the approved expenditure of elementary or higher education, as the case may be, has been substituted. Words have been inserted in different places in the Bill to meet apprehensions of religious bodies who feared that one of the effects of the Bill might be to prejudice the position of the voluntary schools and the religious education in those schools, and some alterations have been introduced in the clauses dealing with the attendance at continuation classes and at nursery schools, and also in the clause dealing with the abolition of fees.

It is desirable that when the consideration of the new Bill comes up again next session, said Mr. Fisher, the House should have before it the Bill in its amended rather than in its original form.

The Bill was read a first time.

## ITEMS OF INTEREST. GENERAL.

ADDRESSING the Training Colleges Association on January 8th, Mr. Fisher said the test of success with which the training college fulfilled its high mission may be exactly measured by the stock of intellectual modesty possessed by the young men and young women it turns out. If the products of the training college are conceit and vanity, then, no matter what can be set on the other side of the account, the college fails. The student who leaves ought to be in a mood in which he desires to continue his course as a learner. The great secret of a good teacher is possession of a lively interest in two things—in the subject taught and in the pupil being taught; but it is impossible to maintain a lively interest in the subject unless you are prepared to pursue the subject, and young people who think that because they have obtained their certificates they are entitled to close the book as having no more interest for them will never make real teachers. Later the President of the Board of Education said he hopes

training colleges will feel that they are organic related to every part of the educational system, and they will not follow an isolated existence, as perhaps they have in the past, and have suffered for it. He hopes that training-college teachers will mix freely with the social and intellectual life common to the educational world, and that they will be regarded as instruments of a great national purpose for which no sacrifice can be too great.

THE Science Museum, South Kensington, was opened to the public on and from January 1st. The museum has been closed to the public for nearly three years; it has, however, been open without interruption for students. As compared with 1914 conditions, the extent and the hours of opening for 1918 are somewhat reduced, but the greater part of the museum will be open free on every weekday from 10 a.m. to 5 p.m., and on Sundays from 2.30 p.m. to 5 p.m. The collections contain many unique objects of great interest, representing discoveries, inventions, and appliances that have been of first-rate importance in the advancement of science and of industry.

THE Modern Language Association held its annual meeting at University College, London, on January 11th and 12th. The president of the year was M. P. Cambon, the *doyen* of the Ambassadors at the Court of St. James's. His presidential address was punctuated with applause. An unofficial ambassador from France, M. Henry Davray, gave an illuminating address on "Les Relations Anglo-Françaises," in which he showed the many misconceptions that had kept the two nations apart in the past, and how these were to be avoided in the future. The most important resolution before the meeting was that of Dr. Hargrave—"That all permanent masters of modern languages in secondary schools should be of British birth." After long discussion, marked by no bitterness, the previous question was moved by Mr. Cloutesley Brereton and carried, and consequently the proposal came to naught. Dr. Prior read a paper on the amount of philology in the modern language teacher needs in his teaching, and Mr. D. Jones illustrated with interesting slides a valuable lecture on phonetics.

AT the annual meeting of the Association of Directors and Secretaries for Education the following resolution was passed unanimously:—"That this association reaffirms its support of the educational principles embodied in the Education Bill (1917), viz.:—(i) the abolition of half-time; (ii) the raising of school leaving age to fourteen; (iii) the establishment of day continuation classes; (iv) the preparation of schemes by local education authorities; (v) the regulation of child employment; (vi) the grouping and closure of schools; (vii) the promotion of social and physical training and welfare; (viii) research; (ix) the inspection of private schools; and is of opinion that in the national interest they should be passed into law at the earliest possible moment."

THE January Conference of Educational Associations adopted the following resolution:—"That these meetings held in connection with the Conference of Edu-

al Associations, January 2nd-12th, 1918, strongly urged on the Government the great national importance of proceeding at the earliest possible date with Mr. E. H. Smith's Education Bill."

THE annual meetings of the Geographical Association were held on January 5th and 7th. At the preliminary business meeting special executive officers were appointed to take charge of such important work as exhibitions, regional surveys, examinations and publications, text-books and maps. A lecture on "The Geographical Study of Britain, Past and Future," was delivered by Mr. Henry Wilson. Mr. W. E. Whitehouse, of Aberystwyth University College, read a paper on "Geographical Study in Geography and Military Education," in which he introduced a few of the very large number of replies he had received from secondary-school pupils who had been asked why they did not draw maps in preparation of examination questions. At the meetings on the second day papers were read by Miss Odell and Messrs. L. Brooks and W. H. Barker on "Geography in Advanced Courses." Miss Odell and Mr. Barker dealt with the kind of geographical work which could be taken in the new courses, whilst Mr. Brooks dwelt upon the inadequate position given to geography in school work. The discussion on the subject was of particular importance, because immediately after the meeting the two principal officers of the Board of Education met the council of the association for a frank discussion. The following resolution was adopted by the association:—"The Geographical Association believes that (a) geography is for strong reasons an essential constituent in each of the three groups selected by the Board of Education for advanced courses, but (b) regrets the fixing of these groups, because this limits possibilities of experiment which could be most valuable at the present stage in the development of the educational system. Geography is in an intense degree the study of experience, and therefore is uniquely concerned in combining direct observational work with more abstract work in the humanities. For this reason the association believes that geography has a very strong claim to be made the pivot of a group of advanced studies which would have for its main aim the training of citizens." Sir W. M. Ramsay, the new president, delivered his presidential address, taking for his subject "The Great Goddess Mother Earth." This meeting was a joint session with the Classical Association. A new feature of this year's meetings was an exhibition in charge of Mr. L. Brooks illustrating various experiments in geographical teaching and regional studies.

A MEETING of the Secondary Schools' Association, presided over by Sir Philip Magnus, Bart., was held at Caxton Hall on January 18th to consider some of the effects of the new grants to secondary schools, and particularly their effects upon the denominational schools. These schools, which are excluded from the grant list because they fail to comply with the Board's regulations as to the composition of governing bodies and the selection of teachers, are, it was pointed out, placed in a relatively worse position than ever by the grants. A resolution was passed to the effect that

the schools concerned ought to unite on a policy and take joint action. The committee had suggested that the regulation as to free places for elementary-school children should be frankly accepted, but the meeting as a whole felt unable to go further than to take steps to ascertain how many schools were prepared to accept this regulation. Some difference of opinion was also expressed as to the position of the private schools. No speaker referred to the obvious inconsistency between the treatment (by Parliament) of denominational elementary schools and the treatment (by the Board) of denominational secondary schools. It may be suggested, also, that nothing is gained in these days by referring, as one of the speakers did, to undenominational schools as "secular," or as giving religious instruction of a "colourless" description. The true line of advocacy is to distinguish impartially between general and specific religious instruction, and to claim equal treatment for both. Nor is it fair to say, as the Dean of Worcester said, that a school is fined because the teachers belong to a religious body. It is because the teachers must belong to that body, and to no other, that the school, under present regulations, is placed under a disability as regards State grants. The meeting was not so well attended as one would have expected, considering the importance of the subject.

WE extend a hearty welcome to our new contemporary, *L'Ecole et la Vie*, the first number of which appeared on September 15th last. It is a weekly journal devoted especially to the interests of teachers in French elementary schools. There are two sections: (a) a journal of direct practical value to the teachers, and (b) a "libre tribune d'éducation nationale," which appeals to the layman who is interested in education. An inspection of the issues that have appeared fills us with admiration, and we are confident that *L'Ecole et la Vie* will prove a most valuable asset in the education of public opinion in France, as well as contributing greatly to the improvement of teaching in the schools. We should like to recommend it particularly to the teachers of French in this country. Each number of the (a) section contains admirable lesson notes under the headings of "langue française" and "histoire," which can be utilised for the teaching of free composition, dictation, and "lecture expliquée." For teachers within the Postal Union the annual subscription for the (a) section is 11 francs, and for both sections 13 francs; the publishers are Messrs. Armand Colin, of Paris.

THE object of the Committee of Education as National Service is to endeavour to find a much greater number of men and women willing to prepare themselves to take part in the educational work of the nation. For this purpose the committee has rented the Mansfield House Residence in Canning Town, to accommodate about twenty students and social workers preparing to teach in day continuation schools, and in the classes of boys' and girls' clubs, the Workers' Educational Association, and other adult organisations. Certain rooms in the residence are being set aside for day continuation classes, and another building with a large hall, known as Fairbairn Hall, will also be used

for classes as soon as the day continuation school grows. A staff of fully qualified graduates will teach in the school. The curriculum will include such subjects as regional survey, citizenship, history and literature, science, home craft, and personal hygiene. The classes will be small, and discussion and debate encouraged. The school will form a self-governing community, and will thus be a helpful demonstration school to teachers in training. Further information may be obtained from the Hon. Sec., Education as National Service, 11 Tavistock Square, W.C.1.

Books and pamphlets and articles on the educational values of different subjects of instruction pour from the press in greater profusion than usual, because of the changes which everybody feels to be impending in our educational system. This activity shows itself not only in defence of the older, but also in efforts to improve the teaching of the newer, studies. Sir R. T. Glazebrook, for example, in his Rede lecture, frankly owns that though the teaching of science to really scientific persons is in a prosperous state, the teaching of science to all and sundry is as yet an unsolved problem. If the exact knowledge essential to the few is required from all, "the majority find the process dull, they get no further than the elements, and when the dreaded examination is over they forget even these, and have no further interest in the subject." Sir Richard, who was a pioneer in science teaching three decades ago, speaks with great authority, but lesser folks can fully corroborate his statements. The republication by Mr. Heinemann, under the title "Science and Education," of lectures given at the Royal Institution in 1854 by such men as Faraday, Tyndall, and Whewell is a rather melancholy reminder that things have not gone so well with the teaching of science as might have been expected. These lectures, with an introduction by Sir Ray Lankester, are issued at a shilling, and, needless to say, are well worth reading. Indeed, they will probably be better appreciated to-day than they could have been "sixty years since."

THE annual report for 1915 of the Department of Public Education in the Cape of Good Hope records that 40 per cent. of the male staff of the head office are serving with the forces in Europe or in East Africa. The annual cost during the year for education per European pupil was £9 7s. 11d., and per non-European pupil just above £1. Four additional inspectors have been appointed; 539 schools have been established, and 377 schools have been closed. Of the net gain of 162 schools, 136 were small rural schools. These schools are opened among a thinly scattered population; in four or five years the children have grown up or gone away, and the school is no longer needed at that place; but there has arisen an opening for a school in another locality. Many school boards provide free transport for children who live more than three miles from school. The Department encourages in every legitimate manner both cadet corps and boy scout troops. The supply of third-class certificated teachers is steadily growing, but that of second-class certificated teachers has declined. In ten years the enrolment of European pupils has increased by 54 per cent.

### SCOTTISH.

THE Secretary for Scotland, in the course of his address on January 11th to the Edinburgh School Social Study, explained and justified the provision in his new Education Bill in greater detail than was possible during the first reading debate. He again emphasised that his one aim was to advance national education and to give to every youth a better chance in life than his father had. To this end all else in the Bill was merely subsidiary. He claimed that criticism so far as it had yet expressed itself, had not touched the really educational part of the Bill, but had been directed entirely against what might be called the machinery. Mr. Munro traced the history of Scottish education from 1872 onwards, showing how after each attempt had been made to circumvent the entrenched position of school boards in order to set a fair field for secondary education. Finally, Dr. Pentland, in the 1908 Act, succeeded in setting up county committees for secondary education. These bodies had done much to foster and advance higher education, especially in rural districts, but they were in an anomalous position as regards school boards, the powers of which in certain fields they had entirely usurped. From the experience gained of the working of these two bodies in the same field he was satisfied that the time had come to set up a single body, and that for the widest possible district—the county. If the accepted the county as the area, he showed what difficulties would be experienced in setting up any other authority than the county council.

THIS year's Congress of the Educational Institute of Scotland was held in the Royal Technical College, Glasgow, on January 3rd and 4th. By general consent it has been voted one of the most successful in the long history of the institute. The subject-matter of all the papers and discussions concerned the new Education Bill, and the proceedings were followed with intense interest by crowded audiences at each of the four sederunts. The president, Mr. John Stevenson, in an able exposition of the principles of the Bill maintained that its provisions constituted the children's Magna Charta. He ridiculed the contention that it was a teachers' Bill, as it failed to deal with many of their most cherished aspirations. But the fact that it raised the school age, limited juvenile employment, set up compulsory continuation classes, and opened wider the portals of higher education was ample reason for regarding it as the children's charter. Mr. James Young, Biggar, presented a masterly case for the county area and the county council authority, and a resolution in favour of this position was carried almost unanimously. Other papers dealt with the raising of the school age, rural education, continuation education, and salaries. Resolutions in favour of the institute's traditional policy on these subjects were carried in most cases by acclamation.

SCHOOL boards, as was to be expected, have hardened their hearts against that part of the Bill which provides for their dissolution. The Secretary for Scotland has called these sections "subsidiary," but school board members regard them as all-important.

it is quite clear that they will do all in their power to wreck the Bill if these provisions are retained. At a meeting of the School Boards' Association in Glasgow on December 8th last the case for *ad hoc* authority was put with great ability and earnestness by the president, the Rev. Dr. Smith, Partick. He did not attempt to defend the school boards as at present constituted, but maintained that the only way to secure adequate consideration for educational questions was to have them dealt with by a specially constituted body. If they were mixed up with questions of drains and sewers, of water and gas, of roads and bridges, it was hopeless to look for educational advance. A resolution protesting against this part of the Bill was carried almost unanimously.

ITTLE sympathy is felt in educational circles for the outcry that has been raised against the proposal to constitute a chair in German in Glasgow and Edinburgh universities. Whatever may be the outcome of the matter, Germany will still remain our nearest and most dangerous rival for trade supremacy. We cannot afford to neglect or to remain in ignorance of her language. Merely on this, the lowest grounds of utility, the study of German will be required. Other and far more important reasons can be advanced for the study of a language that enshrines a great literature. At the same time both the educationist and the man in the street agree that the universities have displayed singular lack of tact, to say nothing of good feeling, in bringing the proposal forward at the present time. This is the more that they now declare there is no intention of making an appointment during the period of the war.

The development of the teaching of English in Glasgow, together with a description of the early books which were used, formed the subject of the address given by Dr. David Murray to the Scottish Branch of the English Association at its autumn meeting in Glasgow University. Until nearly the middle of the nineteenth century English, according to Dr. Murray, was not a subject of instruction in any of the grammar schools in Glasgow, nor, indeed, in Scotland. When himself entered the University of Glasgow in 1857, English literature was not a subject of University study. There were in Glasgow during the eighteenth century a few schools known as "English schools," where an attempt was made to teach the elements of English, but as the pupils left at a very early age, only mere smattering was given. At the afternoon meeting Dr. J. T. T. Brown exhibited a MS. of Bellenden's and Pitcairn's histories, compiled by a scribe as a chronicle. Dr. George Neilson described shortly a early sixteenth-century printed edition of Virgil with notes, sometimes in Latin, but more frequently in English. The Rev. Prof. Moffat gave an address on "Twisted Sayings," meaning by that sayings which had become altered in their application during the course of popular transmission. As an illustration how easily phrases may be altered, Dr. Neilson, who is stipendiary magistrate in Glasgow, said, in the course of the discussion, that an Italian whom he was administering the usual oath, *o*ne to tell "the truth, the whole truth, and nothing

of the truth," whilst another undertook to tell "the truth, the whole truth, and nothing like the truth." Principal Sir Donald MacAlister was elected president for the ensuing year.

PROF. DARROCH, whose educational activities in the northern capital seem limitless, submitted to a recent meeting of the governors of Heriot-Watt College a reconstruction scheme for the future working of the institution. Its general lines indicate at once a widening and a contraction of the sphere of its operations. On one hand it is to be officially recognised as the technical college for the whole East and South of Scotland. On the other, it must contract its field of effort, abandon the omnibus idea of education, and devote itself entirely to technical and technological subjects and courses. The report was adopted, and it was agreed to hold conferences with the various bodies affected.

EDINBURGH School Board has for some time been negotiating with the managers of the voluntary schools within its area with a view to their transference to the national system. In the case of the four Episcopal schools it has proved successful, and these will in future be under the direction of the School Board, with adequate safeguards for the religious interests involved. The Roman Catholic managers have not seen their way to accept the conditions offered, and prefer, for the present, to continue as hitherto. This is unfortunate, as the strain on the resources of the voluntary managers is excessive, and the educational interests of the pupils are undoubtedly sacrificed.

#### IRISHI.

THE Intermediate Board has published the time-table of examinations for the present year. They will commence on Wednesday, June 12th, and continue until Thursday, June 20th. There is nothing specially new in the time-table with perhaps one exception. After being requested by various educational associations for several years to increase the time allowed for the papers in Latin and Greek, this year these subjects have each two hours and a half allotted to them instead of two hours. The examinations in science and drawing for pass candidates will continue as last year. The conditions of passing remain the same as last year, except that boys must pass in arithmetic and algebra, and in geometry.

LAST year closed amid general disappointment without any statement from Mr. Duke in Parliament as to the allocation to secondary-school teachers in Ireland of any equivalent grant corresponding with the Fisher grants in England and Wales and in Scotland. The disappointment will be very bitter if the Parliamentary year closes without the grant being given.

SIMILARLY, the year ended without any definite statement concerning the registration of intermediate teachers. The proposed rules, amended in accordance with the suggestions of the Government, were forwarded to the Castle early in the autumn, and there should have been no undue delay in dealing with them, but months have now passed, and the question seems scarcely any further advanced than a year ago.

THE Executive Council of the Association of Secondary Teachers held its annual meeting in January in the Royal College of Science, when it passed the following resolutions:—(1) That the association protests strongly against limiting the new grant in aid of Irish secondary education to the £48,000 proposed as the Fisher equivalent, and that Ireland has an unanswerable claim to a much larger sum—the equivalent of Imperial grants to secondary education in Great Britain, made previously to the new grant—estimated in the last report of the Intermediate Board as £86,000; (2) That until there are adequate salaries and reasonable security of tenure for lay secondary-school teachers a strenuous objection be offered to the diversion of any of the Fisher grant for the purpose of making provision for summer courses. Another resolution demanded that all written agreements between assistant-teachers and head-teachers shall be countersigned by officials of the Intermediate Board.

JUST before Christmas a largely attended lecture was given by Prof. Browne, of University College, Dublin, in the Royal College of Science, on "The Development of Attic Vase-painting," the object of which was to give information on the Greek vases purchased from the Hope collection last summer, of which part are exhibited in the National Museum and part belong to University College. Before the lecture Prof. Browne gave interesting information about the vases to visitors in the museum.

AN important official document has been issued from the Office of National Education in Dublin in reference to the equivalent grant of £384,000 made last year to elementary education in Ireland. Great dissatisfaction has been expressed by the primary teachers and many education authorities both as to the amount and as to the mode of expenditure, and much criticism and censure have been levelled at the National Education Board. Hence this document, which may be taken as an official statement of the policy aimed at by the Board. It states first that the supplementary grant referred to above falls very far short of the amount estimated by it as necessary to place primary education in Ireland in a satisfactory condition and on an equal footing with the English and Scottish systems. It then sets forth the following heads under which it made proposals:—Improved salaries for all teachers, including increased grants for convent schools; gratuities for the training of monitors and pupil teachers; the discontinuance of the teachers' contributions towards their pensions, and the provision of these pensions wholly by the State; retiring gratuities to junior assistant-mistresses; increased grants to the training colleges; the establishment of day continuation schools; increased grants for evening schools; the establishment of higher grade departments in national schools; grants for the instruction of pupils in woodwork; increased grants for school gardens and the extension of the scheme so as to provide for the instruction of girls as well as boys; the provision of books and stationery for use by the pupils; special grants for teachers of model schools, including a grant for house rent for women principals similar to that allowed at present in the case of men teachers; grants

for residences for teachers of ordinary national schools who are not already provided with free residence grants of the entire cost of schemes for the medical and dental treatment of pupils; appointment of additional inspectors, and increased salaries for the administrative staff.

THE estimated cost of the entire scheme is £780,875 for the first year, rising ultimately to more than one million pounds sterling, whereas the actual sum voted was £384,000, and this to be fixed. The Commissioners object to the artificial or mechanical methods of calculating an equivalent grant for Ireland based either on the population or on the number of pupils in attendance as unjust to the country, to which grants for reforms which have been operative in Great Britain for many years have been hitherto denied.

#### WELSH.

NEWPORT has now definitely announced its decision not to support the proposal for a National Council of Education for Wales. The scheme, desirable enough on educational grounds, appears to be in great danger from local jealousies, as well as from the excessive political bias of many of its supporters, to whom education is merely a secondary consideration compared with their real purpose, that of securing complete autonomy for Wales.

It is proposed to erect on Pilckem Ridge a statue of Hedd Wyn, the shepherd-poet, whose empty chair was draped in black at Birkenhead National Eisteddfod, and to engrave on its base the names of the Welsh officers and men who fell in the action that resulted in the taking of Langemarck.

At a recent meeting of Swansea Education Committee Alderman Colwill read a newspaper extract showing that Mr. Gott, of the Intermediate Schools, had said at a meeting of schoolmasters that "it seemed the chief qualification for members of education committees was colossal ignorance." Alderman Colwill eulogised the work of education committees, and asked whether teachers had the right to make such statements. Mr. Powlesland replied that the committees could not interfere with the freedom of speech of their employees.

IT would not be a matter for wonder if the ears of many members of local education authorities tingled on the day of the meeting referred to—and many other meetings. They have been accused of "embezzling"—not, of course, in the sense of converting to private gain—the moneys entrusted to them to hand over to others; it has been said that the teachers and the office staffs could do all the work of the "authorities in their own spare time—and do it better. The committees have been described as a set of irresponsible, casual amateurs, who apply their intellects once a month to educational matters, and control those who daily business these matters are; it has been pointed out that the members often deal with nothing but buildings and finance, knowing nothing at all about education, and being entirely dependent on the clerks for a knowledge of what to do and how to do it; and that there are boards of governors who have

not so much as seen a copy of the regulations under which they work.

It is gratifying to note the fairness of Mr. Powles and's remark about freedom of speech for teachers; he might have added another consideration—forcibly brought on a recent occasion to the notice of a county committee in South Wales—that the teacher is a citizen, and loses none of his rights as such by being a teacher; he is often a ratepayer—sometimes even pays income tax.

THERE is another side also to public comment; there are those who take delight in belittling the teacher at every opportunity. One South Wales paper recently referred to his "wages"; Cardiff teachers were not long ago told that "public men" had the right to incise their "employees" (whom they do not pay); and the action of the Merthyr teachers in sending in their notices was described as "a piece of unwarrantable arrogance." There is considerable support in South Wales for the proposal that teachers should join the Labour Party.

THE honours conferred under the Order of the British Empire fall in several cases to men whose names are familiar to those interested in Welsh education. No one who has any idea of his services to education and to Welsh nationalism will be surprised to learn that Sir A. T. Davies becomes a Knight Commander, and that the like honour falls to Sir Edgar R. Jones, M.P. for Merthyr, formerly a teacher, and now the able head of the Priority Department. Among the Commanders is Alderman Hopkin Morgan, chairman of the Glamorgan County Council and Mayor of Neath, and a consistent friend of the teacher; and among the Officers Sherman S. N. Jones, J.P., of Newport, chairman of the Monmouthshire War Agricultural Committee, an authority on educational administration and a worthy fighter.

#### THE DEFENCE OF THE CLASSICS : AN AMERICAN SYMPOSIUM.

*Value of the Classics.* 396 pp. (Oxford University Press.) 6s. 6d. net.

The appearance of an American manifesto on the value of the classics reminds one inevitably of Mr. Livingstone's volume, published about a year ago, and reviewed at the time in these columns (vol. xix., p. 70). The two publications differ, however, not only as the product of one mind differs from that of many minds, but also as American educational conditions differ from those of England. In England, as Mr. H. G. Wells has recently pointed out, "the attack upon the classical education does not involve a denial of the high value of that education; it is an attack merely on its exclusive predominance." In this country the classical curriculum is by no means in the position of having to fight for dear life, notwithstanding that modern studies have made great inroads upon the territory it formerly held. In America, the force of tradition, though in favour of the classics, was naturally not so powerful, and real danger to the older studies is therefore greater; and this danger is increased by the confessed peculiarities of the American character—its impatience of that which seems to lead to no immediately practical results, and its belief in short cuts to success.

The work here under review is a record of the addresses delivered at the Conference on Classical Studies in Liberal Education held at Princeton University in June, 1917, together with an introduction and a collection of statements and statistics. A few of the statements are British and French, but the vast majority are American, and they are made by representatives of public life, business, universities and colleges, schools, the ministry, law, medicine, engineering, physical and natural science, journalism, literature, and the non-classical human studies, including history, political science, economics, philosophy, sociology, the fine arts, and Oriental studies. Teachers of the classics are excluded, except in cases where they are the authorised representatives of institutions. We thus have the testimony of about 300 competent and impartial observers, representing the leading interests of modern life, and including many of the highest names in the land, such as Wilson, Taft, Roosevelt, Senator Lodge, and N. M. Butler. "This testimony," as the editor truly says, "with only occasional variation in its degree of conviction or of emphasis on one or another factor, converges steadily to one main conclusion, namely, that classical studies are of essential value in the best type of liberal education, and that whenever the classics are well taught the results are satisfactory."<sup>1</sup>

The variations of conviction and emphasis to which the editor refers are perhaps more marked than he seems to imply. Yet, on the whole, these collected opinions, sometimes barely stated and sometimes carefully reasoned, constitute a sane and consistent plea for "a fair field and no favour." Our English apologists for the classics are not always so modest, but on the whole the contributors to this volume simply ask that America's sons and daughters shall at any rate not be practically denied the opportunity of finding intellectual salvation in the literatures of Greece and Rome. The arguments are not new; they are not all of prime importance; and they are not all equally convincing. But one is glad to see prominence given to an argument which should surely make a strong appeal to any really scientific mind—that if you want to understand anything, including modern civilisation, you must go back to origins; you must study it as a problem in evolution. Our civilisation owes more to Greece and Rome than to Assyria and Babylonia, and none of us therefore should desire the day to come when the study of the former, like that of the latter, shall be pursued only by a very few select persons.

Did space permit, there are several contributions to which one would like to direct the reader's special attention. In particular, Senator Lodge's powerful and eloquent plea should not be missed. Mr. Roosevelt writes with characteristic force and directness, and his incidental remarks on education in a democracy are well worth pondering. As to the specific question before him, he agrees that it is a waste of time to force the average boy to acquire a smattering of the classics, but he sees and says clearly that if the best members of a democratic society are to give of their best to that society, some of them must have full opportunities for drawing inspiration from classical studies.

The moderate position, whether for America or for Britain, is admirably summed up by Lord Bryce. "I do not contend," he says, "that the study of the ancients is to be imposed on all, or even on the bulk, of those who remain at school until eighteen, or on most who enter a university. . . . The real practical

<sup>1</sup> The other side of the case has been put by Dr. C. W. Eliot in his pamphlet, "Latin and the A.B. Degree," issued by the General Education Board of New York.

problem for all our universities [including Oxford and Cambridge] is this: How are we to find means by which the study, while dropped for those who will never make much of it, may be retained, and for ever securely maintained, for that percentage of our youth, be it 20 or 30 per cent., or be it more, who will draw sufficient mental nourishment and stimulus from the study to make it an effective factor in their intellectual growth, and an increasing spring of enjoyment through the rest of life? This part of our youth has an importance for the nation not to be measured by its numbers. It is on the best minds that the strength of a nation depends, and more than half of these will find their proper province in letters and history."<sup>2</sup>

If only our more truculent controversialists would approach the question in the spirit of Lord Bryce's wise utterance, the old antagonism between science and the humanities would speedily vanish. It would be seen, as someone has recently said, to be "simply silly."

T. RAYMONT.

## WINCHESTER COLLEGE IN BYGONE DAYS.

*About Winchester College.* By A. K. Cook. To which is prefixed *De Collegio Wintonensi*, by Robert Mathew. 584 pp. (Macmillan.) 18s. net.

SCHOOL life of the past has a never-failing interest, and that is increased when the school is one of those ancient institutions which are as much a part of England as the House of Lords. How it comes that these great institutions are established in the dark days of autocracy, and only despised or destroyed in the enlightened days of democracy, perhaps some hierophant of the latest cant will proclaim. To us they seem to embody the very spirit of England, and only to need an intellectual new birth. Winchester is the noblest of these establishments, and Mr. Cook has compiled a most entertaining book upon it. The Latin poem which opens the book has been dated and assigned to its true author for the first time: Robert Mathew, 1647. This poem gives a sketch of Winchester life. What a life for less hardy generations! Chapel at 5.30 a.m., school at 6, no fire (except as a special favour) - he thanks heaven for the winter sun in the south; breakfast at 9, with honest English beer and bread, school at 11, dinner at 12, then work again; bevers at 3.30, prayer at 5, then supper; from hall to chambers, and, after light refreshment, a Latin Psalm at 8, then chapel, and bed. The work mentioned is nearly all Latin.

From this poem Mr. Cook takes a number of suggestions as texts for discursive chapters; the various masters, their titles and their duties, with tales about this or that; prefects and bible-clerk; chambers, the children and their meals; classrooms and laws; work, games, and holidays. It is impossible to open the book without finding something to entertain. Here is a list of naughty boys handed in to Dr. Harris in 1600, of whom eight *comas alunt*. Here are the children partaking of bevers or merenda, or washing their faces and hands at "the children's pump"; the first washing-room dates from the accession of Queen Victoria.

Here, again, is Dr. Gabell flogging an innocent boy, and, on finding out the truth, giving him "five tickets of remission from future punishment." A happy boy that must have been, for a week or so! Here and there a headmaster stands out for his personal achievements: Goddard, whose "honourable compact" be-

tween masters and boys did wonders for the discipline. George Riddings, the "second founder," who did much for the welfare of the school through its buildings, and made a veritable revolution in its institutions; George Moberley, who left his mark in many ways. There is not much for the modern schoolmaster by way of "tips"; but someone who wrote notes of method about 1670 shows that there was more common sense then than there is now. "They pickt up Latin rules," he says, "as they learnt them in the Authors"; and again: "They made no Latin [translated no English pieces into Latin] at Winchester till they had learned high classick authors. . . . This is lost in making Latin much at first; but reading classick authors, and then boyes will be able of themselves to do it. . . . They speak Latin everywhere. Cases are on record of boys having the whole "Iliad" or the whole "Aeneid" by heart.

The institution of prefects is popularly associated with Winchester; and although Wykeham did not invent them, he certainly put something like prefects into his statutes. The elder boys had their natural power and influence recognised and were also made responsible, and the effect throughout the school's history has been excellent. They were intended at first to be monitors rather than fag-masters, and they had the right to punish. This custom, however, grew up, and by the end of the eighteenth century was believed by the prefects to be their statutory right. It seems to have been authorised, after a misunderstanding, 1790. Fagging is not in the statutes. There is no doubt that this custom was abused; but if not abused there is no harm in it and much good.

And so we bid farewell to this excellent book: and we hope that readers of THE SCHOOL WORLD will gain as much advantage from it as we have.

## USEFUL BOOKS ON GARDENING.

(1) *Jottings of a Gentleman Gardener.* By E. T. Ellis. viii+268 pp. (Reeve.) 3s. 6d. net.

(2) *The Vegetable Garden.* By Ed. J. S. Lay. 12 pp. (Macmillan.) 1s. 6d.

(3) *The Cultivation of Allotments.* By Percy Elford and Samuel Heaton. 62 pp. (Clarendon Press.) 8s. net.

(4) *Food Gardening for Beginners and Experts.* By H. Valentine Davis. viii+44 pp. (Bell.) 6d. net.

(1) It would be easy to poke fun at the early Victorian title of Mr. Ellis's book, but it is apparently meant merely to convey that the author is an amateur writing on his hobby. The book was written before the possibility of a national food shortage became serious, and so is concerned almost wholly with the cultivation of flowers. The instructions for laying out a garden and securing a constant succession of attractive flowers are practical, and written with an enthusiasm which cannot fail to awaken a response in every garden-lover reading them. Soils and manures, the eradication of weeds and other pests, and kindred topics are touched upon in a manner which makes very pleasant reading. Two useful chapters on the cultivation of vegetables have been added in view of the present urgent need for increasing the national food supply.

(2) Mr. Lay's little book is intended for young pupils, and should lead them to understand the reasons of common garden processes. Its aim is to cultivate such an attitude towards plant-life as will enable children to become intelligent gardeners rather than to depend upon rule-of-thumb methods. No attempt has been made to describe at length the manual operations of the garden, but the book contains excellent illustrated accounts of the various crops and the principles

<sup>2</sup> *Fortnightly Review*, April, 1917. The article has been reprinted in pamphlet form by the General Education Board of New York.

f their cultivation. Instructions for simple experiments are given at the beginning, and a summary and set of useful revision exercises at the end, of each chapter.

Nos. (3) and (4) of our list are severely practical in nature, and will rightly appeal to busy workers whose object is to produce the maximum amount of food from their gardens and allotments. They are both ideal guides for experienced and scientific instructors, and save from many of the pitfalls which beset the path of the unwary and ignorant. They are remarkably good value at the price.

The attention of beginners may be directed, in conclusion, to the free leaflets on food gardening published by the Board of Agriculture and Fisheries, Whitehall Place, S.W.1.

## RECENT SCHOOL BOOKS AND APPARATUS.

### English.

*Twenty-two Goblins.* Translated from the Sanskrit by A. W. Ryder. With illustrations by P. W. Nahl. 20 pp. (Dent.) 7s. 6d.—If this book is meant for the child, or even for the youth, it is difficult to know what to say without being ungracious, for most people would think that many of the stories are unsuitable. But if it be a contribution to semi-fabulous and allegorical literature, then, with a reservation, its value seems great. Let us say at once that it is fascinating from cover to cover, and there is a wealth of colour that seems to harmonise with the somewhat ardent stories. The reservation is in the form of an *if*; and the translator must put it at the door of the author of "The Digit of the Moon" and other "mystifiers," if we ask for more information about "translations from the Sanskrit." Notwithstanding a curious use of words which are generally banished from fairy- and folklore, such as "policeman," "specialist," "crematory," "punctuated," and many others, the grisly Robin's tales do read as though they were the real thing; while the short discussion at the end of each backs back to days long before the *Gesta*. It is interesting to note that one of the stories is found also in the "Persian Tales of a Parrot," another in Miss Wardrop's "Georgian Stories," and a third in any collection of English folklore. In the hands of a teacher who knows how to treat these tales the book might bring an entirely new air over the story-hour; but care is needed. Had the translator followed Mr. J. Jacob's learned and delightful method we should not have had to be so cautious in our praise.

*An Anthology of English Prose.* By S. E. Goggin and A. R. Weekes. 315 pp. (University Tutorial Press.) 2s. 6d.—The reviewer has sometimes pointed out what seem to him to be glaring omissions in books that are edited even by well-known scholars, and with all respect for the editors' excellent illustrations of prose written after Earle it must be admitted, we think, that the promise of the preface "to illustrate the development of our prose in scope and subject . . . and in point of style" has not been fulfilled. Neither Alfred, nor Aelfric, nor the "Acrene Riwele," nor the "Monk of Evesham," nor "Reynard" finds a place in this anthology; Hakluyt has to be content with three pages. But the crowning omission is that of all Bible work. There is no Wyclif, no Tyndale, no Geneva, no Authorised Version here; and the editors know very well the untold debt we owe to Tyndale. Indeed, we

read on p. xvi of "the unique splendour of the Authorised Version . . . which has had more influence on our language than any other book." The answer is, of course, that students know the Bible and have the A.V. at hand. Any tutor of the young should know that a qualified denial may be given to both these statements. A Bible, especially if it be submitted in the actual form of the A.V. or of Tyndale (which is the same), is an unknown book to most students. The latter part of this book is, as we have said, well and fully done. From Milton to Kipling the extracts are well chosen and well introduced. A glossary is appended, but, as usual, we miss the very full introduction. When we consider that translators, with the exception of Bible translators, are well represented, it seems a pity that editors do not recognise that without translators the average student would have no books at all. Translators are the greatest benefactors that the literary world has ever neglected.

*Selections from "Le Morte D'Arthur."* Edited by D. M. Macardle. 116 pp. (Macmillan.) 1s.—The whole of this little book may be praised. The passages taken are the best, the glossary is adequate, the questions at the end are suggestive, and that part of the introduction which deals with Malory as a story-teller deserves to be learnt by heart by the young enthusiast, the only fault being that Miss Macardle has limited her words to two pages. One might hazard the guess that the editor is a story-teller herself, and none but a story-teller should meddle with Malory in school. Possibly, for older pupils, some harder questions should be added. But the book is one of the most successful in its already successful series ("English Literature for Secondary Schools").

### History.

*The Later Middle Ages.* By R. B. Mowat. 339 pp. (Clarendon Press.) 4s. 6d.—This volume is one of the Oxford "Text-books of European History." It fills the gap (A.D. 1254-1394) between Mr. Kenneth Bell's "Mediaeval Europe" and Miss E. M. Tanner's "Renaissance and Reformation." It is rather longer than either of these, but, owing to the fact that (probably because of war conditions) it is printed on thinner paper than they, it appears on the shelf to be much the slightest of the three. Mr. Mowat, who has done good work in various historical fields and has made himself in particular a master of the fifteenth century, has treated the complex period of the Later Middle Ages with vigour and ability. He deals primarily with the Empire and the Papacy (tracing the decline of both from the end of the thirteenth century), and with the new and rising kingdoms of France and England. The Spanish peninsula does not receive adequate attention, and the intellectual ferment which marked the Renaissance is insufficiently emphasised. As a sketch of the political history of the period, however, the book will be distinctly useful.

*Stories for the History Hour.* By Nannie Niemeyer. 256 pp. (Harrap.) 3s. net.—This volume is one of a series of "Books for Story-tellers," of which Messrs. Harrap have already issued half a dozen. It contains sixteen tales carefully selected from among the notable episodes of the period 50 B.C. to A.D. 900. All these tales have a biographical centre; they tell of the great deeds of famous men, beginning with Augustus and ending with Rolf the Ganger. But all of them have also historical significance; they are intended to furnish such information

as a young child's mind can grasp concerning the leading movements of the nine centuries which they cover. In the form here given they are intended for teachers rather than for scholars; they provide the prominent facts which require to be known, leaving the teacher to supply from her (Miss Niemeyer seems to have written exclusively for women) general knowledge the necessary background. Teachers will undoubtedly find here much valuable and interesting material which will aid them in their efforts to make the history-lesson attractive. The literary style of the stories has suffered from the condensation which has had to be applied. In a few cases inexact or infelicitous terms have been employed. A comet, for instance, is not correctly described as "a great star with a long shining flame behind it," nor is August rightly called the "eighth month" of the Roman calendar.

*Serbia.* By L. F. Waring. 256 pp. (Williams and Norgate.) 1s. 3d. net.—Miss Waring here presents us with a careful and well-written sketch of Serbian history from the earliest times to the outbreak of the European war. The medieval portion of the story is treated cursorily, and main attention is concentrated upon the developments which occurred in the nineteenth century. It would be unfair to call Miss Waring's history impartial, for Miss Waring is an enthusiast on behalf of Serbia, filled with admiration for its heroic people and with love for its legends and traditions. Her zeal, however, sometimes blinds her to defects in Serbian civilisation, and causes her to underestimate the difficulties which the neighbouring peoples have had in living peaceably with the Southern Slavs. The Serbian Minister in London has written a preface to the book, in which he deals in an illuminating manner with the crisis which led to the outbreak of war in 1914.

*The Land of the Two Rivers.* By Edwyn Bevan. 126 pp. (Edward Arnold.) 2s. 6d. net.—The "two rivers" of the title of this little book are the Tigris and the Euphrates, and the book itself presents an outline of the long history of human activity in that home of ancient civilisation which their valleys provided. The story begins "ten thousand years before Christ," and it continues to the time of the Mohammedan conquest. Mr. Bevan, who made his reputation as a notable historian some years ago by his masterly work on "The House of Seleucus," condenses a lengthy and complex narrative into brief compass and simplicity with a skill which only a complete control of the materials could give. Those who wish to know more about "Mesopotamia" and the regions bordering upon it can be confidently advised to procure this lucid and authoritative handbook.

*Sailortown.* By the Rev. G. H. Mitchell. 157 pp. (Jarrold's.) 2s. 6d. net.—The author of this collection of short essays, sketches, and poems began his career as a sailor on the *Waspire* training ship. He is now chaplain in the Port of London to the Mariners' Friend Society. It is mainly of his experiences among the seamen of the East End of London that he writes. He presents a series of slight but vivid pictures of the sailor's normal life in times of peace, and of his abnormal perils in this current time of war. Mr. Mitchell has a happy gift of writing. Above all, his experiences as a preacher to the denizens of Sailortown have taught him the virtues of brevity and pith. He goes straight to the point; he never allows interest to flag; he stops when he has reached his goal. His revelation of the East End of London should do much good—especially in the West End.

### Science and Technology.

*Boys' and Girls' Ask-at-Home Questions.* By Marian E. Bailey. 283 pp. (Harrap.) 3s. 6d. net. This is a more modern and much fuller book of the "Magnall's Questions" type beloved of our grandmothers. The questions refer to a miscellany of topics ranging from the countryside to the technicalities of commerce and the mysteries of X-rays. The author claims that the paragraphs are self-explanatory for children who can read, but we fear that few youngsters would make much of such answers as those of "What is an atom?" or "What is water made of?" The book is generally well-informed, though some of the science is not above suspicion. The volume can be recommended to parents and to teachers of young pupils, who will find most of the answers to out-of-the-way questions very helpful.

### Miscellaneous.

*Comparative Religion.* By Dr. A. S. Geden. 144 pp. (S.P.C.K.) 2s. net.—We have nothing but high praise for this timely and interesting little book. With so little space at his disposal, no more can be done on so wide and important a subject, as the author admits in his preface, than to give a brief introduction. But this is done with such completeness that to the reader of little leisure who wants elementary information on this subject of ever-increasing human interest the book will come as a great boon. Brief though the reviews and comparisons of the more influential systems of the religions of the world are, the attempt to give an intelligent insight into the teachings of them is well achieved, and Dr. Geden can be assured that his little book makes it possible to form a fair estimate of the significance of truths held in common and of the cleavages and differences which profoundly separate them. A sound and well-selected bibliography is given, which will prove helpful to the serious student wishing to pursue the subject further.

*St. Matthew.* By Dr. Charles Knapp. (Murby's Smaller Scripture Manuals.) xxxiv + 112 pp. (Murby.) 1s. 6d.—This little commentary is a worthy addition to a useful series. It is eminently practical, and should prove invaluable for class purposes. The notes at the foot of each page, though brief, are of absorbing interest, and quite unlike the usual run of school commentary notes. The text used is that of the Authorised Version, but all important Revised Version readings are given in heavy type—a great gain. The abundant explanations of the numerous similes used in this Gospel are beautifully done, and will fascinate and arrest even the youngest of students, who may have the good fortune to use the book. The introduction, as in all Dr. Knapp's commentaries, is an excellent piece of work. The language is simple and clear, and the choice of matter, both as to inclusion and exclusion, has been wisely made. We recommend the book with confidence either for class use or for the private student who wants a safe preliminary guide to St. Matthew.

*The Writers' and Artists' Year Book. 1918. A Directory for Writers, Artists, and Photographers.* Edited by G. E. Mitton. xii + 185 pp. (Black.) 2s. net.—This useful work of reference has been enlarged again, and writers anxious to know how to dispose of their work will find it invaluable. If only aspiring journalists would study and follow Mr. Mitton's advice, they would save themselves much irritation and give editors far less trouble. The book well deserves the wide popularity it has secured.

## EDUCATIONAL BOOKS PUBLISHED DURING DECEMBER, 1917.

(Compiled from information provided by the publishers.)

### Modern Languages.

"Selections from the Italian Poets." With Critical Introductions by Dr. Ernesto Grillo. 618 pp. (Blackie.) 10d. net.

"Selections from the Italian Prose Writers." With Critical Introductions by Dr. Ernesto Grillo. 616 pp. (Blackie.) 7s. 6d. net.

"Stories and Poems from Famous Russian Authors." Edited by P. M. Smirnoff. With Biographical Notes, Annotations, and Vocabulary. 188 pp. (Blackie.) 10d. net.

"Rabelais: 'Hernani.' Edited, with Notes and Questionnaires, by F. W. Odgers. 116 pp. (Blackie.) 10d. "Rabelais in his Writings." By W. F. Smith. +230 pp. (Cambridge University Press.) 6s. net. De Banville: "Gringoire." Edited by H. L. Hutton. (Oxford French Plain Texts.) 62 pp. (Clarendon Press.) 8d. net.

"Balkók: 'Pilgrims and Wayfarers.' Edited by Will Forbes. (Oxford Russian Plain Texts.) 80 pp. (Clarendon Press.) 1s. 3d. net.

### English: Grammar, Composition, Literature.

"The Army Tutors' Précis Book." Select Passages from Precis and Reproduction for the Use of Candidates preparing for the Army Entrance and Other Examinations. With Some Useful Hints and Specimens. By Grant. First Series. 240 pp. (Blackie.) 3s. 6d.

"Selections from the Poems of William Wordsworth." Edited by A. H. Thompson. (English Romantic Poets.) xl+204 pp. (Cambridge University Press.) 2s. 6d. net.

Oxford Plain Texts:—Shakespeare: "Antony and Cleopatra." 92 pp. "Cymbeline." 92 pp. "Othello." 92 pp. "Romeo and Juliet." 76 pp. "Winter's Tale." 76 pp. (Clarendon Press.) 8d. net each.

### History.

"A History of South Africa." By D. Fairbridge. 6 pp. (Clarendon Press.) 3s. 6d. net.

### Mathematics.

"A Course of Pure Geometry: containing a Complete Geometrical Treatment of the Properties of the Conic Sections." By E. H. Askwith. New edition. -286 pp. (Cambridge University Press.) 7s. 6d.

### Science and Technology.

"The Vegetable Garden." By Ed. J. S. Lay. 144 pp. (Macmillan.) 1s. 6d.

"The Motor Industry." By Horace Wyatt. (Common Commodities and Industries Series.) 140 pp. (Hartman.) 2s. net.

### Pedagogy.

"Cambridge Essays on Education." Edited by A. C. Benson. xx+232 pp. (Cambridge University Press.) 6d. net.

### Miscellaneous.

"The Historical Register of the University of Cambridge: being a Supplement to the 'Calendar,' with a Record of University Offices, Honours, and Distinctions to the Year 1910." Edited by J. R. Tanner. +1186 pp. (Cambridge University Press.) 12s. 6d.

"The Epistle to the Hebrews." Edited by A. Nairne. (Cambridge Greek Testament.) clxvi+142 pp. (Cambridge University Press.) 4s. 6d. net.

Year Book Press Series of Songs for Schools:—No. 147, "Snowflakes Falling." Composed by Basil Johnson. 2 pp. (Deane: The Year Book Press.) 2d.

"Reading Exercises on Pitman's Shorthand Rapid Course." 62 pp. (Pitman.) 1s.

## CORRESPONDENCE.

*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

### Grammatical Reform.

At a meeting held under the auspices of the Teachers' Guild at University College, London, on January 3rd, to discuss the teaching of English in relation to the teaching of other languages, ancient and modern, remarkable unanimity of feeling was shown on the part of the large body of teachers present as to the need for a new departure in the teaching of English grammar, a subject which has been much neglected of late with disastrous results to the teaching of languages, both modern and ancient. Emphasis was laid by several speakers on the fact that in the old days pupils were better provided than they are at present with a foundation of grammatical principles on which a study of foreign languages might later be erected. There was no intention to revive the mechanical methods of the past, but what was demanded was such a study of English grammar as should serve as an introduction to the grammatical structure of all the foreign languages studied in schools. For a fuller statement of what this involves we may refer to the anonymous articles entitled "The Curriculum" (especially the article on language teaching of August 30th) and "The Rediscovery of English" which have appeared within the last few months in the *Times Educational Supplement*. The desired results would, we believe, be achieved by intelligent teaching based on the scheme of grammatical reform proposed by the Joint Committee for the Unification and Simplification of Grammatical Terminology, the report of which (published by Mr. John Murray, and to be obtained through any bookseller, price 6d.) has been recently recommended to the attention of teachers (i) in the Report on the Teaching of French in London Secondary Schools, drawn up by six of H.M. inspectors at the instance of the Board of Education (see § 74, p. 34), and (ii) in the report on the same subject drawn up by Mr. Clodesley Brereton for the London County Council (see p. 13f.).

We, the undersigned members of the Standing Committee on Grammatical Reform, representing the Headmasters' Association, the Headmistresses' Association, the Assistant-masters' Association, the Assistant-mistresses' Association, the Association of Preparatory Schools, the Classical Association, the Modern Language Association, and the English Association, hope that we may at this juncture render a service to education by asking for information on the following points:—

(1) How far efforts have already been made in schools to co-ordinate the teaching of foreign languages with English and with one another.

(2) Whether the scheme of terminology put forward

by the Joint Committee has been found useful to this end.

We should be grateful if heads of schools would kindly help us by sending information on these two points to the hon. secretary of the Standing Committee, Miss Edith Hastings, 180 Elm Park Mansions, London, S.W.10.

An immediate response to this request would greatly assist us in the further steps which we contemplate taking.

E. A. SONNENSCHEIN (Chairman of the Standing Committee).	W. E. P. PANTIN. ELEANOR PURDIE. F. M. PURDIE.
CLOUDESLEY BRERETON. R. M. HAIG BROWN. EDITH HASTINGS.	W. G. RUSHBROOKE. P. G. THOMAS.

#### The Schools Personal Service Association.

THE Schools Personal Service Association, to which reference was made by our vice-president, Mr. Cumberland, in his article in the January number of *THE SCHOOL WORLD*, was founded in September, 1914. The solidarity of all classes of our people appeared to the founders to be the vital need of that time and of the years that lay ahead. So far as the future was concerned the path to that union lay through the schools.

The ideal of the association has been expressed in the following words:—"A nation linked together from childhood in active goodwill by mutual knowledge and appreciation, by mutual service and responsibility."

Its aims and objects have been formulated as follows:—(1) The aim of the Schools Personal Service Association is educational.

(2) It seeks to educate the boys and girls in our schools in such a way as will lead to the betterment of social relations and conditions, and so to contribute to the solution of social problems.

(3) It seeks to develop in young people clear conceptions of social rights and duties.

(4) It seeks to bring together teachers and other educational workers connected with schools of all types, so that by mutual counsel and service they may more effectively attack the great national problem of social education.

Membership of the association is open to all teachers and other workers connected with schools, to parents, employers, and others interested in education. The minimum annual subscription is 1s.

The association arranges lectures and meetings for the discussion of problems bearing upon social education. From time to time it issues pamphlets bearing upon the same subject. It links together teachers in schools of all types, members and officers of education committees, care committees, and juvenile employment committees, inspectors and social workers. It has recently found it necessary to extend its membership to parents and employers. Opportunities for co-operation in securing the welfare of the child constantly and naturally arise, and can be immediately utilised.

It brings into touch schools of different type on the basis of mutual service. Within the schools through the teachers it aims at developing the social consciousness by such means as direct instruction in social science, by developing the social aspects of other subjects in the curriculum, and particularly by encouraging social life within the school. By means of prefects, houses, clubs, and other self-directed activities, children are accustomed to life and service in a democratic community. Again, by means of school journeys, by foreign correspondence, by old pupils' associations, and through the war service of scouts, it would keep

children in touch with the world of reality outside schools.

The full benefit of the idea underlying the formation of the association can be secured only when a branch is formed linking up all the educational activities of a single area. This has been done in Tottenham, Hornsey, and Edmonton, and is being done in the Metropolitan (N. and E.) Branch. The membership of the branches ranges from eighty to 140. There are more than one hundred members scattered throughout the country, and we are looking forward to the formation of other branches in districts where we are represented.

I shall be glad to send a copy of the third annual report to anyone interested on receipt of 3d. to cover printing and postage.

W. E. GIBBARD,  
Hon. Secretary

41 Warner Road, Hornsey, N.8.

#### Permanent Clay Geographical Models.

AFTER a visit to the Cardiff Museum to examine a large relief model of Wales prepared by Mr. W. Whitehouse and Dr. Fleure, with the co-operation of several students of the University College of Wales became convinced of the practicability of producing similar model of our locality with the view of improving the teaching of geography in our school. It is necessary for such a model to be present in my room for many years, but previous attempts with various materials had met with only a fair amount of success so I had to abandon the idea owing to numerous difficulties, such as the limited time allotted to the subject, the question of expense, and the lack of suitable plastic material for forming a permanent model in the course of one or two lessons.

Cardboard was tried on the step or layer system and answered well when coloured to represent lowland plateau, and mountain, but the process is laborious and I came to the conclusion that it would be more profitable to spend the time in studying a good relief map. As an exercise in cardboard modelling it may be commended, as it is an excellent method of giving the pupil some idea of the meaning and value of contour lines, and is the only method possible of reproducing the actual map with all the detail of a model.

We then obtained the assistance of some of the woodwork pupils in preparing layers of wood for the purpose of making simple models of geographical features, and these were afterwards finished with a layer of plasticine to obliterate the steps and to give greater detail than was possible with thin layers of wood, but we found that this was even more laborious than the previous method. It was possible, however, to provide by these means relief models of typical areas which enabled pupils to draw four sections from the side of the model. As the models were all constructed from contoured maps, with which the pupils were provided, a comparison of the two soon enabled them to "spot" such features as gorges, mountain passes, etc., on the relief map.

Our next attempt was to cover a wet-clay model with a layer of plaster of Paris mixed with water to the consistency of thick cream, painted on with a brush and I applied this mixture to step models of cardboard also, but the fragile nature of the finished models made them inconvenient for class use. I also used the method of drawing sections every  $\frac{1}{4}$  in. with pencil to the pupils, who thus gained an insight into map reading, which is, after all, the main object, and the modelling.

The materials at present available, therefore, for preparing geographical models in school hours possess

eral disadvantages which make their constant use impracticable in most schools. Plasticine is expensive and large models; wet clay has a tendency to crack unless covered with a damp cloth; wood and cardboard are difficult to work, and must be finished with plasticine or similar material; wet dough and papier mâché are out of the question in war-time; plaster of Paris requires time for setting, and the preparation of negatives and positives is altogether too elaborate a process for young pupils. A material is needed which will set quickly without cracking, so as to form a permanent model for class work. For this purpose a mixture of ordinary clay and calc spar (or plaster of Paris in broken models) possesses certain advantages, being clean to work with, inexpensive, and permanent. Our first experiment was to model the urban district shown on a 6-in. Ordnance sheet on which the contours at intervals of 50 ft. had been clearly marked with red ink. A thin sheet of paper was then laid on the map, and the lowest contour line traced on it. This was repeated with the other contour lines, a separate sheet being used for each. The paper is then cut along the contour line so as to give the exact profile of the step or layer.

The following articles comprise the equipment necessary for preparing a permanent relief model in clay:—half-inch board, such as an old drawing board, a table knife, a glass roller or cylindrical ruler about 1 in. in diameter and 1½ ft. long, a few trays or card sheets, and some modelling tools. The size of modelling board depends on the size of the model which is desired, although I have found it more convenient to make a large model in blocks about 15 in. square. Strips of wood, 1 in. wide and ¼ in. deep, are laid along the edges of the board so as to form a shallow tray, in which the sheets of clay are rolled together to form the step model. The thickness of the steps can be varied to suit the vertical scale; thus we had a 6-in. map (1 in.=880 ft.), and a vertical scale of 1 in. to represent 50 ft. (1 in.=200 ft.), the vertical exaggeration being 4·4 times.

The work was arranged to occupy a small class of 20, some of the pupils being employed in kneading and preparing the wet clay, some in rolling the sheets out to the required thickness, while others were tracing contours from the Ordnance map. After kneading a number of small pieces of clay, they are placed on the board (which has already been dusted with powdered calc spar or plaster of Paris), rapidly rolled in two or three directions, dusted with more powder until the surface is fairly dry, and then turned over, when the process is repeated until all cracks disappear. The sheet of clay is now detached with a slicing movement of the table knife and laid on one of the trays, and a sheet of paper with the lowest contour laid upon it, when the superfluous clay can be cut away with a sharp knife. The pupils, working in pairs, can now build the clay without difficulty to the required shape with the aid of the contoured map. In some cases it becomes necessary to number or mark with suitable letters the various sheets of paper so as to prevent mistakes. The clay sheets are now collected, carefully dried in their correct position, and lightly pressed or rolled into a solid mass, slightly damping the under-surface of each to make the layers cohere. A modelling tool is now used to give the necessary detail, and this may be stuck in the clay before it hardens, to which labels are attached with the names of the prominent features. The finished model is then mounted on a large sheet of clay about ½ in. thick, to which it will adhere if lightly pressed. It is then placed aside for a few days to dry slowly, and afterwards baked in the sun or in a warm oven, which is not, however, absolutely necessary. A coat of enamel improves the

appearance, and the features can be marked with appropriate colours, or strips of paper may be gummed on, and the model painted or varnished in order to preserve the surface. Small boxes with glass lids are easily obtainable, and keep the models dust-proof.

F. L. LOWTHER.

The County School, Milford Haven.

#### The Fisher Grant.

MAY we, through the valued aid of your journal, seek to remove various misapprehensions, which are unfortunately prevalent at the present time, concerning the position of assistant-masters in secondary schools? It is commonly assumed that the supplementary grant, introduced by Mr. Fisher, which received the sanction of Parliament some five months ago, has solved the problem of school finance, that the under-payment of assistant-masters is happily passing into oblivion, and that higher education in this country is being placed upon a satisfactory footing.

Unfortunately, the facts give little warrant for such optimism. The Fisher grant, if devoted entirely to the salaries of teachers, would provide an annual addition of perhaps £40 in England and £30 in Wales. These amounts, even if granted in their entirety, would not do more than partially restore the value of salaries to their pre-war standard, which is now universally recognised to have been grossly inadequate.

But the case is even more serious. The Board of Education, while stating in its Regulations that it regards teachers' salaries as the primary object to which the new grant should be applied, has apparently left the local education authorities with a perfectly free hand as to the use of the money, merely expressing the hope that there will be no such abuse of liberty as to necessitate more stringent conditions. But this hope has proved ill-founded, for the authorities and governing bodies have in many cases given to their teachers a very meagre proportion of the new grant. We find that in some schools salaries have been increased by £10 and even smaller sums. Furthermore, although the Fisher grant to secondary schools is based upon the attendances of pupils from August 1st, 1916, the teachers' increment is only too often dated from April 1st, 1917. By this device some authorities and governors are retaining for objects other than the primary one the whole of the new grant for the first eight months; and we know of several cases where an even later date has been chosen, and not one penny of the 1916-17 grant has found its way into the pockets of the teaching staff. This breach of trust not only deprives the teacher of what everybody knows to be his due, but also retards the development of higher education, without which our plans for national rebuilding may be laid in vain.

S. A. BIRKS (chairman),

G. D. DUNKERLEY (hon. secretary).

Association of Assistant-masters in Secondary Schools, 35 John Street, Bedford Row, W.C.1, January 8th.

#### Some Unsatisfactory "Proofs" in Elementary Geometry.

In the December issue of THE SCHOOL WORLD Mr. Hawkins criticises adversely the proof usually given in text-books of the converse of Euclid's proposition (III., 21), viz.: If the line joining two points subtends equal angles at two other points on the same side of it, these four points are concyclic. His criticism is unjustifiable, for it is based on an erroneous figure (Fig. 2), drawn contrary to the hypothesis that the angles ACB and ADB are equal. If the ingenious pupil of whom your correspondent speaks has seen the

earlier Elements of Euclid before attempting this theorem, he will at once discover that:—(1) The point C cannot fall inside the angle ADB (Prop. 21, Bk. I.); (2) neither can it fall on the line AD (16, I.); and lastly (3), it cannot fall anywhere on the circle BAD' of Fig. 2, since the points C, D must lie on the same side of AB. Thus, the only possible case is that of Fig. 1; and, with apologies, it is true that the circle ACB must cut AD at another point, which must lie

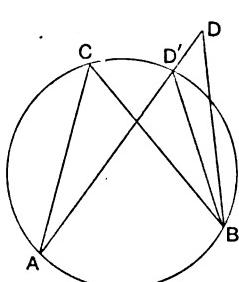


FIG. 1.

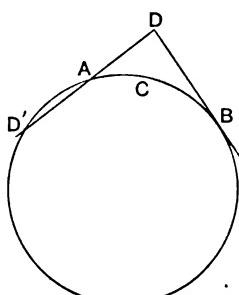


FIG. 2.

between A and D. It is, moreover, irrelevant to the proof whether the circle does, or does not, cut DB in two coincident points.

If such an investigation is necessary, surely it should not be found in a text-book. A note, however, might be useful to remind the pupil that, since the angles ACB, ADB are equal, the vertex of one of the triangles cannot fall within the other.

M. COLGAN.

Rockwell College, Cashel, Co. Tipperary.

MR. COLGAN seems to have missed the point of my criticism, which is concerned with the position of the point D', not that of C. In a *reductio ad absurdum* proof it is necessary that you should have an erroneous figure to represent an impossible position supposed to be correct. Furthermore, it is necessary to dispose of every impossible position which an ingenious opponent could suggest. This Mr. Colgan—attacking the difficulty from a slightly different point of view—does by showing that if the angle ADB is equal to the angle ACB, the line AD must cut one of the chords AC or CB, and must therefore cut one of these arcs. I prefer the method of dealing with the difficulty which I suggested in your December issue, and which has been previously employed by Messrs. Workman and Cracknell. As regards my criticism being "unjustifiable," I should like to point out to Mr. Colgan (1) that I criticised the statement that AD must cut the circle again towards D as a general statement, which it certainly appears to be in the text-books criticised. (2) That the pupils who are learning their geometry from these text-books have not seen the earlier Elements of Euclid. (3) That neither 21, I., nor 16, I., appears in the majority of these books. I also feel sure that a very small percentage of the many thousands of pupils I have dealt with would "at once discover" for themselves the various points which Mr. Colgan credits them with the power to discern. As a matter of opinion, I should not consider it advisable to relegate so important a step in the proofs to a note.

CECIL HAWKINS.

#### The Value of the Study of Latin and Greek.

WRITING upon this subject in the January issue of THE SCHOOL WORLD, Prof. Valentine comments upon the "unhappy narrowness of thought and sympathy" shown by some classicists in failing to recognise the

possibility of a humanistic education without either Latin or Greek; and he finds this failure the more remarkable in that the Greeks themselves attained the highest culture as a result of an education which did not include the study of any foreign language. It is to be regretted that such a confusion of the issue should have appeared in the very forefront, as it were, of what those who have patience to continue reading will find a very reasonable and reasoned article. We do not, of course, advocate the study of Greek because it is a foreign language, but because—to use Prof. Valentine's own words—the Greeks achieved such masterpieces of literature, philosophy, and history.

R. B. APPLETON.

Lyndewode House, Cambridge.

AN expansion of the paragraph to which Mr. Appleton refers will show, I think, that there is no "confusion of the issue," though a desire not to make the article longer than was necessary may have resulted in considerable compression. The first sentence quoted by Mr. Appleton refers to the fact that some classicists speak of the "humanities" as though they were identical with the Latin and Greek classics. The second sentence quoted by Mr. Appleton has reference to the fact that some classicists would oppose the view that a humanistic education could be given even with any foreign language—a point stated in the preceding sentence in my article, which Mr. Appleton omits in his quotation. That some classicists would (and do this is shown by the undoubted fact that they support their argument for the study of Latin and Greek by statements as to the value of the study of the foreign languages as a "mental gymnastic.") Some classicists even put the chief stress upon this argument: cf. the quotation from Canon Lyttelton at the beginning of my second article (p. 39 of the present number of THE SCHOOL WORLD). I am glad to gather that Mr. Appleton is not one of these; but "we" suggests that all classicists think alike. Will please note that I wrote "some"?

As an example of a very different type of classicism giving a very broad interpretation to the term "humanities," may I mention that distinguished classical scholar, Prof. John Burnet, in whose recent book, "Higher Education and the War," the author contends that science itself may be so treated as to be included within the humanities, and that an elementary education may be essentially and properly humanistic.

C. W. V.

## The School World.

A Monthly Magazine of Educational Work and Progress.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 231.

MARCH, 1918.

SIXPENCE.

## THE ARITHMETIC OF CITIZENSHIP.

By T. PERCY NUNN, M.A., D.Sc.  
Professor of Education in the University of London.

### I.

In the valuable Report on Elementary Mathematics in Girls' Schools, recently published on behalf of the Girls' Schools Committee of the Mathematical Association,<sup>1</sup> it is recommended that, for girls between the ages of fourteen and sixteen, the work in arithmetic should "consist in following up some of those applications . . . which are of importance in the general life of the community, e.g. municipal and national finance, banking, insurance." There is a further suggestion that, for girls who leave school at about sixteen, this course may replace the algebra and geometry prescribed for other girls of their age, together with part of the work in those subjects allotted to the preceding stage.

The committee has acted upon the counsel of prudence which bids us deliver our opinions boldly, but abstain, if possible, from disclosing the grounds upon which we hold them. I propose to follow its example, and to confine myself to describing, at the invitation of the editors of THE SCHOOL WORLD, certain simple exercises in the "arithmetic of citizenship" which have been found interesting and profitable not only to boys and girls between the ages named in the report, but also to the scholars in the highest classes of elementary schools. I should like, however, to record my opinion, for what it may be worth, that the recommendations of the committee are soundly based. For reasons of which some—such as the competition of other essential subjects—are disputable, while others—such as the alleged lack of natural interest in mathematics among girls—are open to question, there is undoubtedly a demand for an alternative course which is more limited in scope than that usually as-

signed to boys of the same age. The "arithmetic of citizenship" goes at least some way towards meeting that demand. For, in the first place, it deals with topics which, since they concern everybody, may usefully be considered by all; and, in the second, while it may be made an excellent medium for mathematical discipline, its study does not require the mastery of any elaborate technique. Moreover, the subject seems to be particularly suitable for girls' schools. Whether the recent irruption of young women into banks and similar institutions portends a feminine invasion of *la haute finance* is an intriguing question, but not one to be discussed here. It is, however, safe to predict that women will acquire increasing influence in those departments of public policy that touch, and may be regarded as an expansion of, the economy of the home. A course on the "arithmetic of citizenship" supplies a basis of information and discipline indispensable for the due exercise of these wider responsibilities.

### MUNICIPAL FINANCE.

A convenient way to begin the course is to start a discussion about the more obvious public services of the district. Streets are paved, repaired, and lighted; policemen keep order in them and guard our safety at night; we have, in addition to public elementary and secondary schools, public libraries and public baths and wash-houses; perhaps a public system of tramways. There are also the postal service, and, possibly, a local workhouse and a public cemetery. How are all these things paid for, and who has the handling of the money and the direction of the work? Commencing thus, we soon reach, on one hand, the local rates and the income-tax, and, on the other, the rating and taxing authorities. Everyone knows that the Post Office is a national service, but ideas are not so clear about the other services. We proceed, therefore, to study the information printed upon the demand-note served by a local rate-collector. For conveni-

<sup>1</sup> London: G. Bell and Sons, Ltd., 1916. 1s. net.

ence, we will assume the recipient to be a resident in a London borough. In this case, the first thing we discover is that, although the note is issued by the borough council, and the money exacted is to be paid to one of its officers, three distinct authorities conspire to make the demand, and share the receipts between them. These are the borough council itself, the London County Council, and the guardians of the poor.

Before proceeding to examine the details set out in the note, we inquire into the principle upon which the total sum required is portioned out among the ratepayers. We find that the rates are a burden upon the occupier of house property, learn to distinguish between the rental value of a house and the rent of the ground on which it is built, and find what is meant by the statement that the rate is at so much in the pound. This last point is made clear by a few straightforward arithmetical examples, which serve (incidentally) to justify the statement in the time-table that the lesson is a mathematical one.

The next thing is to examine the several

for the "equalisation fund" (e), 6*62d.* The sections into which the strip is thus divided may, with advantage, be coloured.

Certain questions at once arise. Why do the County Council and the guardians both exact payments for the support of the poor and what is the equalisation fund? We learn that the common poor fund and the equalisation fund are devices for tempering the financial wind to the shorn lamb, and that in the case of both funds every borough in London receives its contribution back, plus or minus an amount determined by its rateable value, its population, and its expenditure on the poor and other services. We find, further, that both the guardians and the borough council receive additional "county grants" tending to reduce or to equalise their burdens. Thus the actual sum required by the guardians for Battersea was at the rate of 1*s. 4*49d.** in the pound; but was reduced to 6*01d.* by a county grant (C) of 2*31d.* and a contribution from the common poor fund (P') of 8*17d.* Similarly, the total sum needed to meet the expenses of the borough was at the rate of

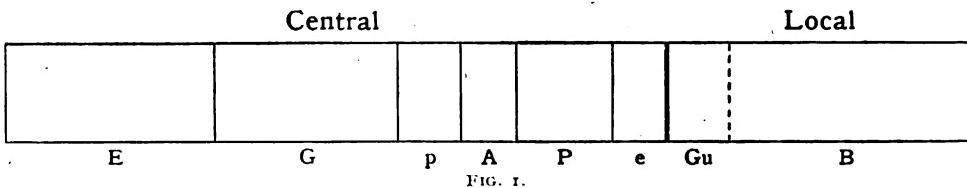


FIG. 1.

items of expenditure named in the demand-note, and to see how they are allotted among the rating authorities. This is best done graphically. Fig. 1 exemplifies a suitable form of graph, showing the destination of the rate of 8*s. 5d.* in the pound levied in the borough of Battersea for the year ending March 31st, 1910. It appears that out of this sum the borough handed over 5*s. 9*3d.** to the County Council, and 6*01d.* (Gu) to the local guardians of the poor,<sup>2</sup> retaining only 2*s. 1*69d.** (B) to meet the expenses for which it is itself responsible. The graphic strip is divided, therefore, by a thick line to show what part of the rate goes to the central authority and what part is expended locally, while a broken line is inserted to show how the local expenditure is divided between the guardians and the borough council. It is convenient also to show that the sum passed on to the County Council is: for education (E), 21*9d.*; for general purposes (G), 18*87d.*; for police (P), 6*1d.*; for asylums (A), 5*8d.*; for the "common poor fund" (P), 10*01d.*; and

3*s. 0*11d.** in the pound, but was reduced to 2*s. 1*69d.** (B) by a grant from the equalisation fund (e) of 10*09d.*, and by a county grant (c) of 0*33d.*

We are now in a position to represent graphically, as in Fig. 2, the sums expended and received for the localised services of Battersea in the year in question. In the upper graph P stands for the total expenditure of the poor (1*s. 4*49d.**); S for that on the streets (1*s. 10*16d.**), including their lighting and paving and the maintenance of the local sewers; H for that on public health (8*7*3d.**); b that on the baths (2*61d.*); L that on the libraries (1*26d.*); and R the residual expenses (1*35*d.**). The references indicating the sources of revenue represented in the lower graph have been given in the preceding paragraph.

The study of these statistics will be seen to offer an excellent starting point for excursions into "civics." The graphic method of presenting the figures is particularly useful from that point of view, since it gives the young student a vivid idea of the relative prominence of the several items of public expenditure. Who, for example, could fail to be impressed by the tenuity of the strip marked "L" in

<sup>2</sup> It happens that, for the administration of the Poor Law, Battersea is joined with the neighbouring parish of Wandsworth. It is clear, however, that the service may be counted local.

- 2, especially when he learns that Battersea's zeal for culture, as measured by the standard, was, in 1909-10, notably higher than that of any other London borough? It is obvious, also, that a considerable variety of profitable arithmetical exercises may be based upon the records. Here are some typical questions that at once suggest themselves:
- i) What percentage of the rates levied in Battersea is expended (a) locally, (b) centrally?
  - ii) What percentage of the whole rate is devoted to (a) education, (b) the support of the poor, (c) the police?
  - iii) The rateable value of the houses in X is £45 per annum. How much does each householder contribute to (a) educating the children of London, (b) maintaining the streets of Battersea?
  - iv) The produce of a 1d. rate in Battersea is £4,400. (a) What is the total rateable

assisted by "imperial subventions." Of these the most important are the grants for education, for the upkeep of the police system, for the support of the poor, and for the relief of the unemployed. The imperial subventions are the source of the "county grants" which, as we have seen, ultimately find their way to the guardians and to the borough council, but much the greatest part of the total is expended directly by the central authority. The second new feature consists in the "revenue-producing services," such as the tramways. Since these not only produce income, but also involve expenditure, they will necessarily appear in both halves of the graphic budget. The third fact that emerges is that the central authority is both a borrower and a lender of money on a large scale: it borrows from the public and from the Government the capital needed for building schools, extending the tramway system, etc.,

### Expenditure

#### Guardians

#### Borough Council

P	S		H	b	L	R

### Receipts

#### Guardians

#### Borough Council

C	P'	Gu	e	c	B	
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FIG. 2.

ie of the borough? (b) How much does it cost to maintain the libraries?

#### COUNTY AND NATIONAL FINANCE.

After studying the local budget, the natural next step is to follow up the contribution of "central" in Fig. 1, and to see what place it occupies in the finance of the county. This is best done by constructing graphs, like those of Fig. 2, showing the annual expenditure and receipts of the London County Council.

There is no space here for the details, they are easily accessible, together with a mine of information admirably set out, in any volume of the "London Statistics" (S. King and Son) published by the Council. A convenient summary will be found every year in "Whitaker's Almanack." In considering the county budget, three important new facts come into view. The first is that London does not by any means stand way out of its own rates, but is

and it lends to the guardians, the borough councils, and other authorities (such as the Water Board) the sums they need for their new undertakings. The sums received and disbursed, partly in repayment of capital advanced and partly as interest on the amounts outstanding, must appear in their proper places in the graphic statement. The arithmetical problems suggested by their presence will be considered below.

The treatment of national finance should follow the same general lines. Here we investigate the main sources of national revenue and expenditure, finding out, for instance, how much is received from direct taxation and how much from indirect taxation, how much the State contributes to education, what old-age pensions cost, what the difference is between funded and unfunded debt, etc. It will generally be better not to consider these subjects immediately after county finance, but to postpone them until the

second year of the course, when their treatment gives an opportunity for the revision of earlier knowledge. All the information that the teacher needs will be found in the annual issue of "Whitaker's Almanack" or in the "Statesman's Yearbook."

#### THE THEORY OF INTEREST.

It may be assumed that, either concurrently with, or before, the study of municipal finance, our pupils learn how to calculate percentages. There is not the least need to teach what is called "simple interest" as a separate subject. The exercises in calculating percentages should themselves contain, from the outset, problems concerning the return or "rent" from capital invested in house property, in public funds, such as war loans, and in industrial undertakings. In dealing with these, as with public finance, the teacher should use the arithmetical problem as an instrument for communicating essential information upon matters that have an intimate bearing upon the general weal of the community. Thus the investment of capital should be considered primarily, not as a means by which well-to-do shareholders may live at ease, but rather as an indispensable factor in any advanced state of industry and public polity. The lessons should include the examination of the prospectus of some new useful undertaking, such as a railway or waterworks, and also the study of some straightforward industrial balance-sheet. The distinction between ordinary shares and "debentures" should be elucidated, and the meaning of such terms as "reserve fund" and "depreciation" explained. Simple calculations on the value of investments should be included in the work, but should not be made the only or even the central subject of consideration.

The theory of interest, in the proper sense, is reached only with the study of "compound interest." It is well to place this topic on a wider basis than is customary, by making the calculation of financial "amounts" and "present values" appear as merely special cases of the general problem of determining the value of a magnitude subject to a specified law of growth. Two such laws have special interest and importance. The first is that exemplified by the depth of water in a reservoir into which, or from which, a uniform stream is pouring, by the uniform increase or decrease in velocity of a moving body, such as a stone or a train, and by other similar instances. In all these cases the increase or decrease takes place by equal increments or decrements in equal times, and the graphic representative of the phenomena is a sloping

straight line. The second typical law of growth is exemplified by a quantity the magnitude of which increases or decreases equal times by geometrical progression. This may conveniently describe the "common ratio" of this progression as a "constant growth-factor." Thus, in Fig. 3, let the ordinate  $A_0$  represent the height of a girl on her eleventh birthday, and let us make the assumption (which may be roughly true) that for a few years before and after this date her height increases in such a way that its annual growth-factor is always 1.045. Then the ordinates  $B_1, C_2, D_3, \dots$  which represent her stature on her twelfth, thirteenth, fourteenth, and subsequent birthdays are to be calculated by multiplying  $A_0$  by the growth-factor once, twice, thrice, etc. Similarly, the stature one, two, three . . . years before her eleventh birthday is to be determined

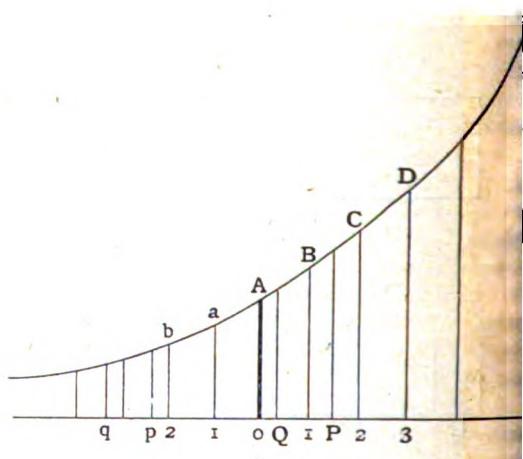


FIG. 3.

one, two, three . . . successive divisions by the growth-factor. If, as time advances, the magnitude of the quantity decreases (in the case of an isolated population where the death-rate exceeds its birth-rate), the growth-factor will be less than unity, but the method of calculating the magnitude at a given time will be the same as before.

In order to bring out the effect of this law of growth it is natural to add to the calculated ordinates the smooth curve shown in Fig. 3. It cannot, however, be assumed that this curve, like the straight line which represents the first law, gives the magnitude of the growing quantity at times intermediate to those for which they are computed. But we may easily assure ourselves that this is the case. Let the several members of the class draw pairs of equidistant ordinates, such as those labelled  $P$  and  $Q$ ,  $p$  and  $q$ , choosing at random the position of each pair and the interval between

Then every girl will find that the ratio of the height of the right-hand ordinate to that of the left-hand ordinate is the same for both her pairs, though it will, of course, not be the same as the growth-factor for the unit of time, unless, by chance, the interval between the ordinates represents that unit. From this discovery we may fairly draw the conclusion that each ordinate of the curve represents the size at the moment indicated by the abscissa, of a quantity growing uniformly in such a way that the successive magnitudes over unit intervals of time are calculable by given growth-factor. For instance, if the distance  $op$  represents  $2\frac{1}{2}$  years, the ordinate  $p$  represents the height of our girl at the age of  $8\frac{1}{2}$ .

The financial applications of the argument are obvious. Let  $Ao$ , in Fig. 3, stand for a given sum of money subject to interest payable at a given rate once a year. To fix our ideas, let the rate be  $4\frac{1}{2}$  per cent., so that the annual growth-factor is  $1.045$ . Then the ordinates  $B_1, C_2, \dots$ , represent the "amount" of this sum one, two, etc., years after the moment represented by  $o$ , while the ordinates  $b_2, b_3, \dots$ , show its "present value" one, two, etc., years before that moment. The former are to be computed by successive multiplication by the growth-factor, the latter by successive division.

It will be observed that this mode of approach to compound interest has the signal advantage of reducing the calculation of amounts and present values to mere variants of a single process, and of making their connection with one another so clear that not even the dullest pupil can find difficulty in it. We pass now to an important but simple refinement—the distinction between "nominal" and "effective" interest. Money invested on compound interest does not, as a rule, grow like a girl's height, continuously. The general custom is to "add the interest to the principal" at stated intervals, which are, however, usually less than a year. Suppose the "nominal" rate to be 4 per cent. per annum, and the interest to be added to the principal quarterly. Then it is obvious that we are really concerned, not with an annual growth-factor of  $1.04$ , but with a quarterly growth-factor of  $1.01$ . To obtain the amount of our principal at the end of a year we must multiply four times in succession by  $1.01$ —which is equivalent to multiplying once by (approximately)  $1.0406$ . In other words, the "nominal" interest of 4 per cent. per annum is, in this case, equivalent to an "effective" rate of about  $4.06$  per cent. per annum.

There is a simple and very instructive method of exhibiting results of this

kind graphically. In Fig. 4, let the curve  $AP$  be any "growth-curve" drawn in accordance with the foregoing prescription, i.e. so that ordinates at equal intervals increase geometrically. Let the height of  $AO$  be unity, that of  $pr$  be  $(1+i)$ , where  $i$  is the nominal rate of interest per pound per annum, and let that of  $PR$  be  $(1+i/n)$ ,  $n$  being the number of equal intervals per annum at which the interest is added to the principal. Through  $A$  and  $p$  draw lines parallel to the axis  $OR$ , and through  $AP$  a secant cutting the parallel through  $p$  at  $p'$ . Then it follows that  $p'q'$ , being equal to  $pq$ , is  $n$  times  $PQ$ , and hence that  $Aq'$  is  $n$  times  $AQ$ . Thus, if a series of ordinates were drawn to the right of  $AO$  at equal distances  $OR, PR$  would be the first and  $P'R'$  the  $n$ th. It follows that  $P'R'$

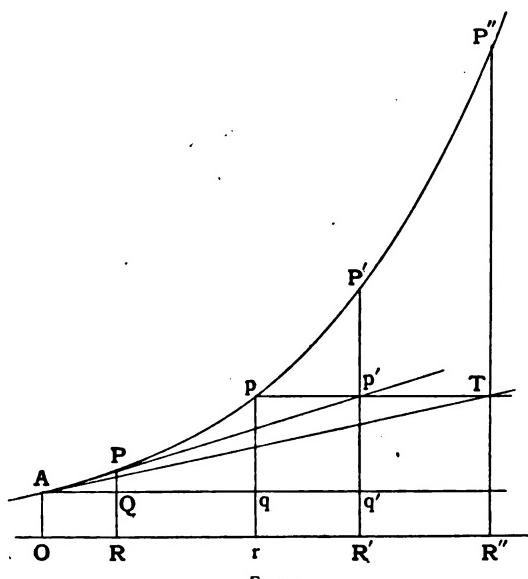


FIG. 4.

$= PR^n = (1+i/n)^n$ : that is, that  $P'R'$  represents the effective annual growth-factor, and  $P'q'$  the effective annual rate of interest per pound.

We are now in a position to answer a very fascinating question. The more frequently the interest is added to the capital the greater is the effective annual interest. If, then, we could persuade an obliging financier to add the interest frequently enough—say every second—could we acquire in a year "riches beyond the dreams of avarice," or is there a limit to our possible gains? I find that, as a rule, students expect illimitable profit, but consideration of the graph shows that their anticipations are ill-based. As the interval for the payment of interest grows smaller,  $PR$  approaches  $AO$ , and the secant  $AP$  becomes nearer to  $AQ$ . But  $AP$  can never pass beyond the tangent  $AT$ , and

the effective annual growth-factor can never, therefore, exceed  $P''R''$ , the ordinate through the point T where the tangent is cut by the parallel through p. As I have shown elsewhere, it is easy to express this limiting growth-factor in terms of the celebrated number called e, and to conclude the whole argument without the help either of the exponential or of the binomial theorem.

(To be continued.)

### PRÉCIS-WRITING IN SCHOOLS.

By NORMAN HEPPLE, M.A., M.Litt.  
English Master at Gateshead Secondary School.

**M**Y text is a sentence from the examiners' report on the work of candidates in English at the Oxford Senior Local Examination held in July last :—

Relatively few candidates seem at all adequately to realise the distinction between a précis and a paraphrase.

Like many divines, however, who announce a text, I do not propose to say a great deal about it, but merely to make it the occasion of some remarks on the teaching of précis-writing in schools. If, in the course of these remarks, I find it necessary to distinguish between paraphrase and précis, it must not be thought that I am crediting my fellow English teachers with the same shortcomings as the candidates who drew down the above animadversion on their heads. I need scarcely say that to suggest such a thing is as far from my purpose as the suggestion itself would be remote from the truth. In mentioning paraphrase at all in this connection, I merely wish to show the relative positions of the exercises in the school course, and how far the principles involved in the one exercise may be used in teaching the other.

Précis may be defined as an abridgment or brief summary in continuous prose of the essential ideas in any given passage, document, or series of documents. From this definition it will be apparent that the writing of précis involves a double process, selection and abbreviation—double in the sense that a flower may be double, and not merely twofold, for each process is part of the other. Here at once emerges the fundamental distinction between paraphrase and précis: the former merely requires the comprehension and re-expression of *all* the ideas in the passage to be treated; the latter demands, first of all, the extraction of what is most vital and essential, and the rejection of all that is of less importance. So that, involving as it does, not merely the understanding, but also judgment and discrimination, précis-writing as a formal exercise should

follow paraphrasing, and come late in the school course. Moreover, for reasons which will presently become apparent, it will be great assistance to both teacher and pupil if the exercise is delayed until the latter has acquired that facility in analysis and synthesis of sentences generally to be gained only by practice during the first two or three years of his school life.

If I may at this point revert for a moment to our text, let me say that I am not without certain amount of sympathy for the candidates who incurred the criticism expressed therein. In the examination paper they were instructed to "rewrite in a shorter and simpler form, but so as to preserve *all*<sup>1</sup> the ideas contained in it," the passage that was set. Now, as many of them had doubtless been taught that a paraphrase must retain all the ideas of the original, and a précis generally only the most important ones, they may, perhaps, be to some extent forgiven for having failed to notice, or having forgotten, that the instruction also asked for abridgment. To make a considerable abbreviation without sacrificing at least some of the less essential ideas must have been an exceedingly difficult achievement for young people, especially when they were required, in addition, to re-express the passage in a simpler form, which is actually a species of paraphrasing. After all, the exercise, as set, was a kind of hybrid, and for the candidate to have emphasised one of the component elements at the expense of the other was an offence which might be not unreadily condoned.

It is, however, with unadulterated précis-writing that the present article is concerned. How can a pupil best be taught to perform that joint operation of selection and condensation which we have seen, lies at the root of the matter. He is too often, I am afraid, merely told to omit all that is superfluous, unessential, or less essential, and to retain what is most important; to make a summary or a digest, an epitome or an abstract; to give the gist of the passage, and so forth—all of which is excellent advice and entirely to the point, but scarcely adequate for a beginner. It seems desirable that for his guidance in such a difficult task the teacher should give him something more tangible, some definite method which he may apply, as he so wishes, to any exercise he may be given, some principles to the touchstone of which he may bring any difficulty he may meet with in practice. Many occasions will, of course, arise when considerations of speed make it impossible to follow out the method *in detail*; we may have sometimes to leap quickly to a result and leave out some of the intermediate steps; but

<sup>1</sup> The italics are my own.

the result so arrived at will approximate to accuracy according as we have or have not previously put into practice methods which we can count on always to produce a correct result; in much the same way, for example, as the accuracy of a sudden judgment by appearances is determined by our previous experience in judging other cases, after having deliberately and carefully measured them by well-considered standards.

From what has been said it will have been gathered that the three points on which special stress must be laid in teaching the subject are : (a) thought-analysis, (b) abridgment and selection, (c) the expression of the précis in continuous prose; and bearing these in mind, we must devise some scheme by which the pupil may be taught both what a précis is and how to proceed in making one. With these purposes in view, I venture to tabulate the stages in a method which I have found serviceable in the case of my own pupils, and suggest that, if followed out a few times, it would dispel any misapprehension that might exist as to the respective natures of précis-writing and paraphrasing.

**1. CAREFUL READING.** The pupil should, first of all, be advised to read the passage through once or twice with great care. The object of this preliminary reading is that he may acquire a general knowledge of the contents and the mode of their distribution in the passage, in order that he may not disproportionately emphasise any one phase of the subject at the expense of the others—a thing he might easily do if he at once attacked the various parts of the passage piecemeal and *av latim*. This fault is so common that measures should be taken at the outset to anticipate it, and, if I may suggest a simple illustration which generally makes the matter clear, the pupils might be told that a précis bears the same relation to the original passage as a landscape viewed through the wrong end of a field-glass bears to the same landscape as seen by the naked eye: the most prominent objects in the real landscape remain the most prominent objects in the reduced view.

**2. THOUGHT-ANALYSIS.** It is impossible for pupil to select what is most important in a passage if he has not thoroughly explored all its contents and mastered its meaning. To enable him to do this I know of no better method than the making of a thought-analysis, which seems as indispensable in précis-writing as it is in paraphrasing. In the latter exercise, it is necessary for the pupil to re-express, if possible, every shade of thought in the original, I recommend that he should seek to isolate for a while each complete idea, and

grapple with any difficulties it may present until they are overcome, and the thought stands out singly and clearly in his mind, when he should state it accurately in his own words, and tabulate it on paper. A precisely similar process may be gone through in précis-writing, except that in tabulating the individual thoughts in his analysis he must abridge his statement of them. As this is the point where the paths to paraphrasing and précis diverge, advantage should be taken of it to press home the distinction between the two exercises and to emphasise the fact that while in the former all the details are retained, in the latter there must be abridgment, the methods of effecting which bring us to the next step.

**3. ABRIDGMENT AND SELECTION.** These are, as we have seen, complementary processes, but for the purposes of this paragraph we shall distinguish them as two kinds of abridgment :

(a) Abridgment of language only, by which (1) all superfluous expressions may be excised, and (2) shorter forms substituted for longer ones—a single word, for example, for a phrase or for a clause. Exercises worked during the rhetoric course in connection with offences against the rule of brevity should prove of advantage here.

(b) Selection, which is equivalent to abridgment of thought. The extent of such abridgment must be determined by the dimensions to which the original passage has to be reduced. In most examinations, where only one or two paragraphs are set for the exercise, it is usual to reduce the passage to anything from about a half to a third of its original length. In other cases, where an entire document or a series of documents has to be dealt with, the reduction has to be much more drastic, the précis often amounting only to about one-sixteenth of the original. Guidance as to the length desired should always be given, and in giving it the teacher ought, of course, to consider carefully the style of the passage he prescribes, as it is obvious that some writers lend themselves to condensation more than others.

In any case, abridgment by selection can be properly done only when the relative importance of the facts is appreciated, for only thus can the essential facts be retained and the less important details dropped. The success of a précis depends, therefore, on the degree of intelligence and judgment exercised by the pupil in the process of abbreviation; but it may be of some help to him if we point out that a certain amount of guidance can be obtained from an application of the principles of grammatical analysis, with which we may assume he is familiar. Thus, in a simple sentence, the unenlarged subject, the

verb, and the simple direct object are generally of primary value, all qualifying and modifying words being, as a rule, of secondary importance. Similarly, in a complex sentence the subordinate clauses are usually less vital and necessary than the principal statement. Such aids are, however, more or less mechanical, and cannot always be relied on, though they may be used by a beginner for what they are worth.

In teaching pupils how to prepare a contracted thought-analysis I have found it a good plan to write up the passage on the black-board, and to strike out the parts dealt with as they are replaced by their shortened equivalents, which should be tabulated on the same board by the side of the original. In this way the pupil can see the passage melting, as it were, before his eyes into the smaller dimensions of the précis.

**4. SYNTHESIS.** In the last stage of the method, the preparation of the finished précis, advantage may be taken of the exercises in synthesis of sentences so universally worked in connection with the composition lessons. If the separate sentences in the contracted thought-analysis be now synthesised in similar fashion, the effect will be at once to achieve additional abbreviation and to produce the finished précis in the form of a continuous prose passage.

As an illustration of the method in operation, may I here be permitted to make a précis of the passage set at the Oxford Local Examination already referred to? The passage is as follows :

When at school, the tasks in which he excelled were those only which he undertook voluntarily; and his situation as a young man of rank, with strong passions, and in the uncontrolled enjoyment of a considerable fortune, added to that impatience of strictures or coercion which was natural to him. As an author he refused to plead at the bar of criticism; as a man he would not submit to be morally amenable to the tribunal of public opinion. Remonstrances from a friend, of whose intentions and kindness he was secure, had often great weight with him; but there were few who could or dared venture on a task so difficult. Reproof he endured with impatience, and reproach hardened him in his error; so that he often resembled the gallant war-steed who rushes forward on the steel that wounds him.

#### CONTRACTED THOUGHT-ANALYSIS.

- (1) At school he excelled only in voluntary tasks.
- (2) His strong passions, rank, and the free use of a fortune increased his impatience of control.
- (3) As an author he ignored criticism.
- (4) In his morals he ignored public opinion.
- (5) He would often listen to the remonstrances of a tried friend.
- (6) Few could or dared remonstrate.

(7) He was impatient of reproof.

(8) Reproof merely hardened him in his error.  
[The simile is omitted as being merely explanatory.]

#### FINISHED PRÉCIS.

At school he excelled only in voluntary tasks, showing an impatience of control increased by his strong passions, rank, and the unrestricted use of a fortune. As an author he ignored criticism, and in his morals, public opinion; though he would listen to the remonstrances of the few tried friends who dared make them. He was impatient of reproof, which only hardened him in his error.

The finished précis, it will be observed, is in this case about half the length of the original. If further reduction be required, we must drop out some of the particulars, always selecting for this purpose those next in order of unimportance. The ultimate précis of a passage would be its title, and it is a good exercise for the pupil to find suitable titles both for the entire passage and for the separate paragraphs in it, should there be more than one.

The teacher should insist on seeing the contracted thought-analysis in every case of the first half-dozen exercises or so, when, it may be presumed, the pupil will thoroughly understand what is required of him in précis writing, after which, if it is thought desirable and especially in the case of long exercises it may be remitted.

The uses and applications of précis-writing are numerous. Apart from its undoubtedly great educational value as a method of developing the judgment and inducing concentration of thought, it has uses of an eminently practical character. It assists in the formation of a concise prose style; it forms the basis of indexing; it is the secret of intelligent note-making in connection both with reading and with listening to lectures or speeches, while to a journalist or a barrister it is invaluable. If these allurements are judiciously displayed to the pupil, he may be induced to undergo willingly and with patience the necessary training in an exercise which, though interesting, is in its initial stages undoubtedly a severe form of mental discipline to a young mind.

*A Short History of French Literature.* By George Saintsbury. xvi+638 pp. (Oxford University Press, 8s. 6d. net.)—No words are needed to praise this standard work, of which the seventh edition has just appeared. There is no better handbook of French literature in the English language. Since its first appearance it has been revised and corrected with scrupulous care. The veteran scholar is well justified in his hope that he leaves this book "as a definite estimate of the great subject concerned, made towards and at the close of one of its most brilliant periods, on the basis of personal knowledge and direct judgment, not unassisted by acquaintance with literatures other than itself."

## DESCRIPTIVE ASTRONOMY IN "SCIENCE FOR ALL" CLASSES.<sup>1</sup>

By the Rev. A. L. CORTIE, S.J., F.R.A.S.

**B**Y descriptive astronomy is meant some knowledge of the physical appearances of the heavenly bodies as disclosed by the telescope and the spectroscope, and elementary notions as to the causes of their real and apparent motions. In the memorandum on the aims of science teaching in general education drawn up by a committee elected by the Association of Public School Science Masters, it is stated that, in a course of general science, an attempt should be made to arouse the pupil's appreciation of the value and scope of science. Hence such science is to be taught in a general manner "by directing the attention of pupils towards objects rather than by making them learn subjects. Such objects would in their range embrace the universe and the electron, and would include a generalised knowledge of the facts and methods of astronomy, geology, physics, biology, and physiology." Similarly, in the Report of the Committee on Science in Secondary Schools of the British Association for the Advancement of Science, particular importance is attached to the teaching of natural science, "as a body of inspiring principles," and as possessing a truly humanising influence. This includes a training in the power of independent observation, particularly in reasoning upon the facts of observation and deducing their causes. Observation and experiment are the groundwork of science, which essentially and primarily consists in the deduction of causes from the phenomena observed.

Descriptive astronomy is admirably adapted for that training of the mind which is generally designated by the term "a liberal education." The contemplation of the sun, the moon, the planets, and the stars, appeals to the sense of admiration and wonder at the works of God the Creator in Nature, and that, too, in a manner peculiarly its own. This is a motive or an incentive to observation which affects not only the young, but also all who can acquire some idea of the vastness of space, the multitude of the stars which people it, and the beauty and magnificence of their orderly arrangement. There is an immense field for even naked-eye observation. And accurate observation of the apparent movements of the sun, the real and apparent movements of the moon and the planets, and the varying aspect of the stars at different seasons of the year, to go no further, will inevitably stimulate curiosity as to the causes of these movements, and lead to a knowledge of their laws.

Among the seven arts, the subjects taught in the trivium and quadrivium, which constituted the syllabus of a liberal education in the schools in the Middle Ages, astronomy occupied an honourable position. In this respect the school boy or girl of that period seems to have been more favoured than those who receive even a public-school education in these more modern and scientific days. Chaucer's "Canterbury Tales" for instance, and later the plays of Shakespeare, were written for an educated audience, and we must suppose that the people understood the astronomical allusions. At any rate, in these works there are not found such glaring and elementary mistakes in descriptive astronomy as are not infrequent in modern times, even in the works of writers of repute, not to speak of the daily Press. We wonder how many boys or girls who are educated in our elementary and secondary and public schools to-day could give an intelligent explanation of the astronomical allusions to be found in the works of these classical English authors.

Among Chaucer's prose works there is a treatise on the astrolabe—the modern equivalent would be a stereographic projection of the celestial sphere, on the plane of the equator, or of the meridian—which he composed for the instruction of his youngest son, Lewis, who was then studying under a tutor at Oxford. The following is the dedication:—"Lytel Lewis, my sonne, I perceive well by certaine evidences thine abilitie to learn sciences touching numbers and proportions, and also wel consider I thy busie prayer in especiall to learn the Treatise of the Astrolabie . . . therefore I have given thee a sufficient Astrolabie for an orizont, compounded after the latitude of Oxenford." He adds that the reason he had compiled it was because the charts of the astrolabe that he had seen were "too hard for thy tender age of ten yeares to conceive," and he had written it in English, "for Latine ne canst thou nat yet but smal, my lytel sonne." This was in the fourteenth century.

But even in the tenth century the illustrious scholar and Benedictine monk Gerbert, afterwards Archbishop of Rheims, and the first French Pope under the name of Sylvester II., taught astronomy by means of models of globes which he constructed with his own hands. In fact, he was probably the first of the schoolmen who illustrated his theoretical teaching by practical work. Even as a busy Pope he did not disdain to instruct his scholarly correspondents in the mode of construction and use of such globes. His biographer, Richer, describes the various instruments which he made, in order to render the science of astronomy practically sensible to the

<sup>1</sup> Paper read before the Association of Public School Science Masters on January 9th, 1918.

eyes of his pupils. The world was represented by a round wooden ball with its poles oblique to the horizon, on which were drawn various circles to explain geographical and astronomical phenomena. From the descriptions of Richer we are led to conclude that Gerbert exhibited in his lectures two very passable examples of the terrestrial and celestial spheres. And this was in the Dark Ages!

In the British Association Report on Science Teaching in Secondary Schools, under the heading "Method in Science Teaching," we are told that

among the motives which have prompted men to make those persistent attempts to understand Nature which we call science, three have always been especially conspicuous. The first is derived from the contemplation of the beauty and orderliness of the phenomena in Nature, delight, for instance, in the splendours of the heavens. This appeal is made to the minds of all, but perhaps is most conspicuous in the case of the young. The beauty of Nature arouses not only their wonder, but likewise stimulates their curiosity, and their eagerness to know the reason of the phenomena observed. At a later stage there enters also another motive, which is designated as the "utility motive"—that is, the motive which makes men study natural phenomena in order to turn the forces and powers of Nature to their own advantage and profit. Lastly, and this belongs pre-eminently to those who have studied natural phenomena in some completeness, comes the motive that prompts men "to seek fundamental principles in Nature, and to co-ordinate their knowledge in a unified system."

All these three motives have their vogue and realisation in a study of descriptive astronomy. We need not, by needless repetition, insist on the first, the wonder or admiration motive. Its influence is patent and self-evident. But, if we consider the utility motive, we find its application, for instance, in the determination of time, in the construction of the calendar, by which we regulate the ecclesiastical and civil ordering of our lives, in the navigation of our ships across the trackless oceans, in surveying, or in the direction of our troops in a night-attack upon the enemy. The "systematising motive" is found in the history of the science, in the unifications of the movements of the heavenly bodies, first devised by Ptolemy, and afterwards extended and improved by the theory of Copernicus, the empirical laws of Kepler, the law of universal gravitation discovered by Newton, and its applications to the explanation of the movements of the bodies of our system and its stability by Lagrange and Laplace. Such books as Miss Clerke's "History of Astronomy in the Nineteenth Century" and Prof. Grant's "History of Physical Astronomy" would form an excellent course of reading for

students who had reached such a stage as to be affected by the notions of law and order as applied to the starry firmament.

We may now approach the consideration of a course of descriptive astronomy that would be suitable for our schools and colleges. Let us begin with practical work. There is always a difficulty in such work inherent in the order of the day in our schools, and the necessary discipline, which does not contemplate late hours. However, there is a whole series of instructive observations that can be made on the sun and his spots by means of a simple projection apparatus attached to a telescope, the positions of the spots being determined by discs which contain the orthographic projections of his parallels and meridians, and their areas by simple graduated scales. Again, in the months in winter in which sunset is early, there is generally ample time for observing before any late hour. The moon, too, can always be observed when at a suitable phase in the twilight sky. The same is true also of the brighter stars when observed in a transit-instrument.

It would be advisable, therefore, that, if possible, every physical laboratory in a public school should have attached to it, preferably as part of the laboratory itself, a small astronomical observatory. The equipment should consist of a transit-instrument, most essential of all for teaching accuracy of observation by the eye-and-ear method for beginners, a sidereal clock, a chronometer, and an equatorial telescope, about 4 in. in diameter. How interested boys would be to keep correct time in the school clocks by observations of the transits of stars, besides the training in accurate observation that would result by observing transits! Armed with Webb's "Celestial Objects for Common Telescopes," the telescope could be employed in the early hours of the winter nights to explore the more remarkable objects among the nebulæ and the stars, and the aspects of the planets. Bootham School at York possesses an observatory such as has been described, and much good and useful work is done by some of the older students. But even if a school is without any instrumental equipment, a series of lectures illustrated by lantern slides will do much to supplement its want. In such a series of slides, for instance, as that issued by the Royal Astronomical Society we have the finest observational results, obtained at the chief observatories in the world, placed at the disposal of all. A good elementary text-book such as Tancock's "Course of Descriptive Astronomy" could be studied in conjunction with the projecting-lantern in lieu of, or preferably in addition to, a small telescope. In Prof. Percy

Nunn's "Scheme of Science Work for an Urban Secondary School for Boys," as printed in the report of the British Association already referred to, will be found several simple experiments to be performed by the students which illustrate the course of astronomy outlined. Experiments bearing on the subject could also be performed with gyroscopes and spinning-tops. Orreries and astronomical models, such, for instance, as that constructed by Dr. Wilson, which was exhibited to the association, would be found to be useful adjuncts in teaching. We might also direct attention in this connection to an excellent scientific sundial, the helio-chronometer, invented by Mr. G. J. Gibbs, which bears upon it the necessary corrections, made by settings, for the equation of time, so as to derive mean solar time from the local time of the sun's passage across the meridian. Many interesting illustrative experiments are also detailed in Prof. Turner's admirable book "A Voyage in Space."

With regard to a theoretical course in the subject of descriptive astronomy, the following may serve as a specimen. It has been drawn up mainly by the Rev. J. P. Dolan, O.S.B., of Ampleforth College, and is the syllabus actually followed at the school. The course extends over three years, one period a week of the "science for all" teaching being devoted to it.

**First Year.** For younger boys: Descriptive course on the solar system, the sun, the planets, comets and shooting stars, stars and nebulae.

**Second Year.** For the mathematical classes: Apparent motions of the heavenly bodies; the great circles of the celestial sphere; Ptolemaic and Copernican systems; historical development; diurnal and annual motion of the sun; the equation of time; the seasons; precession of the equinoxes; the moon's motion; eclipses.

**Third Year.** For the mathematical classes: Kepler's laws; Newton and the law of gravitation; cause of precession illustrated by experiments with gyroscopes, on the lines of Prof. Perry's "spinning-tops"; tides; celestial measurements; parallax; distance of the sun; methods of measuring the sun's distance; stellar parallax; the motion of light; aberration; the spectroscope and constitution of the sun and stars; Adam's method of finding stellar distances; structure of the universe; stars and nebulae; proper motions of the stars; nebular hypotheses; other modern theories.

It might be invidious to suggest text-books for such a course, but among possible books that would be helpful are Tancock's elemen-

tary book on descriptive astronomy, and for older students Prof. Young's "General Astronomy." There is also a primer on astronomy by Sir Norman Lockyer, the little book "The Stars" in the "People's Library," and Prof. Newall's admirable elementary manual "The Spectroscope and its Work," which can be recommended. Such works, too, as Sir Robert Ball's "Story of the Heavens" and "The Earth's Beginning," and Newcomb's "Popular Astronomy," furnish interesting and stimulating reading, and should find a place in every school library. Among star maps we have Bigourdan's excellent "Petit Atlas Céleste," with its explanatory matter, and the little book published by George Philip and Son, "The Stars at a Glance." The Scottish Provident Institution also distributes as an advertisement an instructive series of "Star Maps," with accompanying tables. In the issue for 1918 there is also a projection of the heavens in hemispheres, or an astrolabe, by means of which such problems as to find what stars would become visible to an observer in any part of the earth, when a star will come to the observer's meridian, the approximate times of the rising and setting of a star, or of the sun, or of any heavenly body, can be solved by inspection of the projection and the use of the tables.

But the main object of this paper is not to draw up a scheme of instruction in elementary astronomy, theoretical and practical, but rather to enter a plea for the inclusion of some course of descriptive astronomy in the syllabus of the "science for all" classes. It is also intended to elicit the opinions of those who have had experience in the teaching of such a course, that they may be helpful in the reconstitution of the "science for all" classes in our public schools, so as to present more fully the human and the humanising aspects of the pursuit of natural knowledge. We want our teaching to be broad and comprehensive, not narrow and specialised, to furnish, in a word, the elements of a truly liberal education.

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*Poems of Keats.* Edited by W. T. Young. 331 pp. (Cambridge University Press.) 3s.—This volume gives us the usual introduction, but delays the commentary to the end of the book. This is excellent, if the late editor's directions are followed by the class that reads Keats. How far Keats or similar poets should be read in school before that preliminary training in Keats's material is given which our schools are very shyly considering is a matter that is not yet permitted to be discussed in the magazines. But this commentary, all too short, leads us to suppose that Mr. Young, whose lamented death in Flanders lays its own wreath upon the book, could have envisaged a series of volumes far more "introductory" to English literature than are our ordinary school editions.

## AN INQUIRY INTO THE VALUE OF THE STUDY OF LATIN AND GREEK.

By C. W. VALENTINE, M.A., D.Phil.

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### III.

#### 4. CLASSICS AS A MEANS OF SELECTING THE INTELLIGENT.

**W**E come now to a more uncommon argument in favour of retaining Latin, namely, that it is, because of its difficulty, a useful eliminator of the weak—especially at university matriculation examinations. It may be admitted that the standard of work required in Latin is generally higher both at matriculation and often in the pass university courses than is the case with some other arts subjects. The reason is, largely, that tradition has assigned such an important place to classics and mathematics that relatively more time and care are given at school to these than to other subjects. The obvious means of preventing a lowering of the matriculation standard, if compulsory Latin be dropped, is to require a higher standard in some other subject or subjects at matriculation; and to begin with a higher standard in modern languages than is at present sometimes required, may be demanded, and will be provided for, as a result of the greater amount of time that could be given to it at school, especially in the earlier years, say from eleven to fourteen or fifteen, if Latin were not taken. Then in a very short time the standard in other subjects might reasonably be raised somewhat, especially in English, in which the literary and linguistic paper might well be supplemented by another requiring critical treatment of the substance-matter of a course of reading selected works of admitted literary merit, and involving at the same time solid thought and reasoned argument.<sup>1</sup>

#### 5. LATIN AND GREEK AS BASES FOR THE STUDY OF OTHER LANGUAGES.

We have finally to deal with another argument in favour of the study of Latin and Greek, namely, that they form an excellent basis for the study of other languages. This argument is particularly used in reference to the study of Latin, and we may confine our discussion to that language.

In the first place, how many pupils do proceed far in the study of other languages? If

Latin is an excellent foundation, it is usually a foundation scarcely built upon. If the object is to teach the boy French, he would certainly know far more French when he left school if he spent upon French even half the time per week devoted to Latin than he does by dividing his time between the two languages. The argument is really one of the linguistic scholar, who is thinking of the advanced student of modern languages. But this argument is surely not enough to justify the teaching of Latin to the majority of boys on the chance of their becoming advanced students of other languages.

But what of the help which Latin affords in the study of English? In the first place, we tend again to forget the richer vocabulary and phraseology in English which boys would acquire if part of the time now devoted to Latin could be given to a much wider reading in English. The argument that grammar is best taught through Latin is considerably weakened now, as it is so widely recognised that much of the grammar teaching of the old type is unnecessary for the teaching of English.

Prof. Bennett<sup>2</sup> argues that the close attention to the precise meaning of words in translating gives a training in the exact use of English. With this point I have already partially dealt; but Prof. Bennett on an adjoining page supplies an excellent reply to his own argument in his long quotation from J. M. Barrie's "Sentimental Tommy," describing the essay competition in which Tommy takes part. The topic for the essay was "A Day in Church." Tommy, it will be remembered, spent nearly all his time trying to find the right word to indicate precisely the number of people in the church. "Puckle" was almost right, but did not mean so many people as he meant.

Someone suggests "mask." "I thought of mask," says Tommy, "but that would have meant the kirk was crammed, and I just meant it to be middling full." "Flow would have done," suggested another. "Flow's but a handful." "Curran, then, you jackanapes." "Curran's no enough." The friends throw up their hands in despair. "I wanted something between 'curran' and 'mask,'" said Tommy, dogged, yet almost at the crying. Then Ogilvy, the master of the victorious McLauchlan, but whose heart is secretly with Tommy, and who with difficulty has been hiding his admiration, spreads a net for him. "You said you wanted a word that meant middling full. Well, why did you not say 'middling full,' or 'fell mask'?" "Yes, why not?" demanded the others. "I wanted one word," said Tommy. "You jewel," muttered Ogilvy under his breath.

<sup>1</sup> We have suggested that some time saved from Latin in later years might well be spent partly in some study of Greek and Roman thought and institutions through English translations. If a paper on these lines were set at matriculation requiring a knowledge, among other things, of one or two philosophical Greek works, it might, at some universities, be required as an alternative to Latin and Greek, and could easily be made a guarantee (and one in the hands of the classicists themselves) of a sufficient standard of mental capacity in dealing with "humanities."

<sup>2</sup> "The Teaching of Latin and Greek." By C. E. Bennett and G. P. Bristol. (Longmans.)

Later on Tommy runs back to shout with joy that he had found the word : it was a "hantle."

Now the interesting points here for us are : (i) that this careful thought about language is entirely in the vernacular. Yet Prof. Bennett uses the illustration in an argument to show the importance of Latin as a training in the careful use of English ! (We have seen before that the Socratic dialogues, the most thorough-going inquiries into the exact meaning of terms, were an exercise in the vernacular.)

(ii) Tommy's efforts were concerned with finding the right word to express a thought originating in the mind of the writer—an extremely important linguistic function and one not practised by translation. In translating from Latin it is the thought of another that one has to express in language, and, as already urged, effort (except at the higher stages) is largely concerned with finding out what the foreign words mean rather than with finding a means of expressing that meaning in English. It may be that by providing the pupil with ideas in Latin to express in English we are giving him practice in expressing a wider range of ideas than if we left him merely to express his own ideas. But what is the purpose of developing a power to express ideas which we cannot conceive for ourselves ? This only leads to verbalism, except, of course, in so far as it leads to the ideas themselves being absorbed and later on used by the reader—and this can be done far more readily by more extensive reading of varied books in English. English composition in schools and universities surely suffers as much from lack of ideas as from lack of careful thought as to the precise meaning of words.

Another form taken by this last argument in favour of the study of Latin and Greek is this—that they help the student to understand the meaning of English through a knowledge of the words from which so many of our own words are derived. One may hear a man of science say that his Greek has been useful in understanding technical terms in science. As a matter of fact, most men who studied classics only at school probably find that the tracing of a derivation is a means of rubbing up their remnants of Latin and Greek, rather than that these help them much towards the meaning of English terms. No doubt the study of derivations and the history of words is to many a fascinating one. But it is absurd to suggest that the numerous Greek and Latin verb-forms, Latin and Greek syntax, the use of particles, etc., must be all learned so that single words in English, derived from Latin or Greek, can be understood, the derivation of which, if desired, could easily be studied ad

hoc individually. It is significant that the Medical Council has now admitted that Latin is unessential even for the doctor.

#### 6. SUMMARY OF PRECEDING ARGUMENTS.

In summing up the various arguments the following points, I think, tend to emerge :

(i) The cry "*Classics versus Science*" is misleading. If less time is to be devoted to classics, the appropriate substitutes would be to a large extent other "humanities," other literature or some of the human sciences.

(ii) The fact that such a large proportion of our leading men have been classically trained may mislead us as to the value of classics as a training, for the majority of the best men at the universities, until comparatively recently, studied either classics or mathematics, many being selected through the numerous scholarships in these subjects. Further, their training was very much wider than the mere study of the language. They advanced far enough to be concerned largely with the admirable content of all that is best in Greek and Latin literature.

(iii) The argument that so much of our culture and thought has its roots in Greece and Rome only justifies the study of the ideas and institutions of those countries, and this can be done through translations. The *finesse* of thought which can be got in the originals alone can be appreciated only by advanced students. For the average boy or student any loss through reading only translations is far more than compensated for by the larger amount of ground he can cover in English translations.

(iv) More may be lost from an æsthetic point of view, but here again the loss is largely confined to the advanced student; the average pupil is too much occupied with the difficulty of the language. Also, time for æsthetic training could be better employed by a wider reading of English literature, of which the pupil is usually so ignorant, and by more attention to the appreciation of music and art.

(v) The argument that Latin and Greek afford a unique general training in observation, memory, judgment, and reasoning is based largely on a false psychology. In so far as it is true, it probably holds only for the very best students of these subjects, while for the average student the training can be got better by more direct practice with the material for which the "faculties" are to be trained. As a means of such training the resources of English literature especially have hitherto been most inadequately exploited.

(vi) Converging lines of argument (as well as the testimony of many experienced teachers) thus point to the view that, in so far as the

various reasons for the study of classics are valid, they apply only in the case of those who have a real talent for the subjects, and who also carry them to a stage represented by an honours course at the university; except that perhaps honours students of other languages derive sufficient benefit to make merely a pass course in Latin or Greek worth while the time spent upon it.

#### 7. PRACTICAL SCHEME OF REFORM.

The question now arises : How, if we are not to let classics entirely disappear as a study, are we to select the students competent to pursue the subject to an advanced stage?

It remains, then, in conclusion, to make one or two practical suggestions, which I throw out in a most tentative way, as, of course, a satisfactory scheme requires the collaboration of a number of experts. The scheme refers to secondary education only. If French were begun at, say, ten years of age, the concentration on one language only at a time for four years would result in a much greater facility in the use of this language at fourteen than is now the case, when time and energy are diverted from it at eleven or twelve, or even earlier, by the study of Latin. We may reckon the time spent by the average boy doing Latin, at the early stage, at about nine or ten hours per week (half in school and half preparation). This time now set free between the years ten or eleven and fourteen might be spent as follows : About one-third to be added to the time already given to French, and the rest to be given largely to wider studies in English, with perhaps the addition of a little more time to a more scientific study of geography, or to nature-study.

By fourteen years of age, after four years of French and a fuller study of English, the boys of marked linguistic ability would have revealed themselves, and these might now begin Latin, at the special wish of parents, or if some career was already so clearly marked out for them as to involve the likelihood of their wishing to pursue honours courses in classics or modern languages (including English) at the university. The exceptional boys, who are likely scholars in classics, will, indeed, have reached this stage probably by thirteen, and, if we take the school-leaving age to be seventeen, will still have before them four years of school for the study of Latin. We must assume that the Latin and other languages taught, except French, will be taught in "sets," and not as a part of the regular form work, so that boys from the same form can go into different sets in Latin. During the first year of Latin the time given to French could be reduced by more than half, and the time thus

saved added to the present usual Latin allowance, thus making the year fourteen to fifteen a time of close concentration on Latin, say eight or nine hours in school instead of five. Thus, as these students would be (i) boys picked for linguistic ability, (ii) much more mature than the average beginners on the present system, (iii) prepared to some slight extent by their more thorough French studies, we may certainly expect far more rapid progress than is the case at present. There are classical teachers already who hold that boys in the long run do better when they begin Latin *later* than at the age at present customary.<sup>3</sup>

After one year of such concentrated study of Latin (*i.e.* at fourteen or fifteen), some of the boys who show special talent in their Latin studies might take up Greek, if a classical honours course at the university was already decided upon. Others might prefer to take up another modern language or to extend their studies in English. The hours stolen from French for Latin at fourteen would now be added to the usual allowance for Greek or the second modern language, in order, as before, to concentrate on the new language during its first year of study.

Let us now return to the majority of boys who, having shown no special linguistic talent at fourteen, do not take up Latin. For them, too, the year fourteen-fifteen would be one of more or less marking time in French. Some would now take up a second modern language; others would prefer additional science work. (All, it is hoped, would be doing *some* science work.) Even at fifteen it would not be too late for a boy whose linguistic talent has revealed itself somewhat late to take up Latin in time to do a good two years' work before matriculation, if there appears any special reason why he should do so, such as that he desires to aim at an honours course in modern languages. Those who do not take up Latin would have ten or twelve hours a week saved partly for extended studies in English, including selected translations from the classics, and partly for any other subjects which the particular school may choose to develop more fully.

I have confined my attention largely to the classical and modern sides, but it is to be hoped that the time saved by the concentration on one foreign language only, in the early years, and the lessening of the hours required for this at fourteen, would enable the boys specialising in science to share in the extended English course of later years.

Two special difficulties remain to be dealt with, the first, I think, not serious. What

<sup>3</sup> Prof. Burnet, in his delightful "Higher Education and the War," gives a remarkable testimony to what may be done by able linguists who start Greek as late even as their first year at the university. See especially p. 127.

would become of the many teachers of Latin and Greek in the schools? Their obvious function would be to take up the extended English work and, of course, the studies of classical culture through translations. The opposition of keen classicists to extended reforms would, I think, be greatly lessened by the wider influence through their lessons on classical literature, and also by the fact that those pupils who do take up the Latin and Greek languages will be picked linguists. On such a scheme the lot of the future university teacher of classics would be an enviable one.

The other difficulty is more serious, namely, that such a large proportion of scholarships at some universities are restricted to classical students. Some changes would have to be introduced here if the old evil is not to be continued—the compelling of such a large proportion of the ablest boys to specialise in classics (or mathematics). As it is, while the scheme suggested above will exclude from the classical studies all but the ablest linguists, it will at least leave open the door to specialisation in modern languages to some of these talented linguists, and will also set free boys whose special ability does not lie at all in linguistic studies. Its greatest danger would probably be that, owing to the careful selection of classical students, the universal excellence of the classically trained man of the future would lead to a revival of the belief that classics should be prescribed for all.

#### PERSONAL PARAGRAPHS.

THE announcement that the King has been pleased to approve of the appointment of Sir J. J. Thomson to be Master of Trinity College, Cambridge, has been received with much satisfaction, not only in the University, but also in all circles where scientific genius is held in honour. Sir Joseph was elected a fellow of the college in 1880, when he was second wrangler and second Smith's prizeman; and he has been Cavendish professor of experimental physics at the University since 1884. The remarkable researches carried out by him and his students have opened up completely new fields of physical science, and provided conceptions which have led to unexpected developments of scientific work and thought. An account of these investigations was given in NATURE of March 6, 1913, when Sir Joseph was the subject of an article in the series of "Scientific Worthies." Since 1915 Sir Joseph has been president of the Royal Society, and he is an active member of many important advisory and other committees and councils appointed since the opening of the war. He has shown unmistakably that high administrative capacity

can be combined with brilliant scientific knowledge, and these attributes will make him one of the most distinguished of the series of Masters of Trinity, which extends from John Redman in 1546 to the late Dr. Butler, who was appointed in 1886, and includes Isaac Barrow, who preceded Newton in the statement of the principles of the Infinitesimal Calculus; Richard Bentley, author of the scholarly "Dissertation on the Epistles of Phalaris"; and William Whewell, author of the famous "History of Inductive Sciences."

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CONSIDERABLE satisfaction is felt in the teaching profession at the appointment, announced in these columns last month, of Mr. J. A. Picken, headmaster of Palfrey Senior Council School, Walsall, as inspector of schools under the Walsall Education Committee, his predecessor, Mr. A. Hibbert, having accepted the secretaryship of the same authority. Mr. Picken has had thirty-five years' teaching experience in Walsall, and the authority may be congratulated on selecting one of its own teachers for such an important administrative post. Mr. Picken has been a keen member of the National Union of Teachers throughout his career. He is honorary secretary and vice-chairman of the Walsall Education Society, and has held the offices of president and secretary of the Walsall Head Teachers' Association. The appointment is of considerable interest in that teachers are united in the opinion that successful teaching experience should be a necessary qualification for candidature to an administrative post.

\* \* \*

THE Essex County Education Authority has appealed at the County Appeal Tribunal, Romford, for Mr. E. L. Miskin, schoolmaster on Foulness Island. "Far from the madding crowd's ignoble strife," Foulness Island lies at the mouth of the River Crouch, north-east of Shoeburyness. It is difficult of access and numbers a population of some 500, mainly engaged in agriculture. Mr. Miskin has occupied his spare time successfully in rendering scientific advice and assistance to the farmers, and the tribunal granted temporary exemption only, in the hope that some other teacher would volunteer for service on this lonely island.

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THE Italian silver medal *pro valore militare* has been awarded to Mr. P. J. Baker, fellow of King's College, Cambridge, and son of Mr. J. Allen Baker, M.P.

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AT the Town Hall, Sheffield, public recognition has been given to Miss Escott, who, for nineteen years, occupied the position of

headmistress of the Sheffield High School for Girls previous to her recent appointment at the Clapham High School. The Lord Mayor, on behalf of the Education Committee and the old pupils of the school, presented Miss Escott with a necklace, a cheque, and an illuminated address. Her portrait is to be hung in the school, and the deep influence of Miss Escott's work on the social and intellectual life of the city was referred to in the address.

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MISS COOK, head of the Cookery Centre, Retford, has resigned her position, having taken up a commission in the W.A.A.C. in France.

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THE impending resignation is reported of Sir Walter Parratt, D.Mus., C.V.O., honorary fellow of Magdalen College, from the professorship of music in Oxford University. Sir Walter has occupied the chair for some ten years.

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THE early publication of "War Letters of a Public-school Boy," by the late Lieut. H. P. M. Jones, son of Mr. Harry Jones, assistant-editor of the *Daily Chronicle*, is announced by Messrs. Cassell. Mr. Jones was head of the modern side at Dulwich and captain of football, 1914-15. Before joining the Army he was scholar-elect of Balliol College, Oxford. He was killed on July 31st, 1917, after two years' service with the Cavalry and the Tanks.

\* \* \*

THE Leeds Education Committee has made arrangements whereby the services of Mr. James Graham, secretary to the committee, have been placed at the disposal of the Government. Mr. Graham is to assist in organising the establishment of municipal kitchens in populous centres. At the same time he will retain control of the local administration of education in an advisory capacity.

\* \* \*

IT is interesting to note that Dr. F. W. Lloyd, the new Prime Minister of Newfoundland, was formerly a schoolmaster in England. Dr. Lloyd received his early education at Christ Church School, Heaton Norris, and, after a short experience as a pupil teacher, migrated to Newfoundland some twenty-eight years ago. He there graduated in Laws and finally gave up teaching for the Press and law work. His success soon brought him into public prominence and he became a member of the House of Assembly.

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PROF. J. A. GREEN, professor of education, Sheffield University, has been placed by the Sheffield Education Committee on a small sub-committee which is to consider what provision

should be made in the district for additional secondary education, the character of the education to be provided, and the advisability providing additional free places at King Edward VII. School. Prof. Green's knowledge and experience of the education systems on the Continent should be of invaluable help to the committee.

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ADMINISTRATIVE circles will regret the resignation of Dr. H. Lloyd Snape, Director of Education for the County of Lancashire, after seventeen years' service. Dr. Snape suffered from a nervous breakdown in 1916-17 and found it necessary to reside in a warmer climate. His tact and ability in the administration of education in Lancashire are shown in the high degree of efficiency reached in the various districts in the area. Dr. Snape is at present member of the Departmental Committee upon Salary Scales in Public Institutions for Higher Education.

\* \* \*

THE Church has suffered a great loss by the death, on February 3rd, of Canon Knox-Little. Born in 1839, Canon Knox-Little took his degree at Trinity College, Cambridge, and entered Holy Orders. For some time he acted with unqualified success as an assistant-master at Sherborne School, and in 1870 accepted a curacy at Turweston, Bucks. He was appointed a Canon of Worcester in 1871. During the South African War he served as Army chaplain to the Brigade of Guards and the Household Cavalry, being mentioned in dispatches and receiving the Queen's medal and clasps. On returning home he was appointed Dean of Worcester. An eloquent preacher and a prolific writer, with clear convictions and an openness of mind, Canon Knox-Little was fearless in his endeavour to say and do what he believed right, and his character and charm of manner endeared him to all.

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MISS ETHEL SARGANT, honorary fellow of Girton College, died at Sidmouth on January 16th after a brief illness. Miss Sargent was educated at the North London Collegiate School and Girton College, Cambridge, taking the two parts of the Natural Sciences Tripos in 1884-85. She was the first woman to serve on the council of the Linnean Society, and she was president of the Federation of University Women at the time of her death. Miss Sargent earned fame by her botanical researches in the direction of anatomy and morphology. She had the distinction of being the first woman elected president of a section of the British Association when in 1913, at Birmingham, as president of the Botanical Section, she gave an

dress on "The Development of Botanical Bryology since 1871."

\* \* \*

LEUT. G. A. LE CHAVETOIS died on January 22nd from the effects of wounds received in action. Mr. Le Chavetois was a pupil at St. Olave's from 1895 to 1905. After graduating at London University he was appointed to a mastership at Emanuel School. In 1912 he joined the staff of his old school, and was largely instrumental in organising the school cadet corps. He was an officer in the corps until he undertook military service. With his battalion, he took part in the campaign in East Africa, and was dangerously wounded in the November last.

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THE death is reported, on January 23rd last, of Mr. C. G. Kiddell, educational editor of Sir Isaac Pitman and Sons, Ltd. A former student of St. John's, Battersea, Mr. Kiddell graduated in Arts at the London University, and for some time occupied the science mastership at Queen Elizabeth's Grammar School, Kent. To his facile pen we owe the pleasing and popular "Selborne Nature Readers" and "Observation Lessons in Botany."

ONLOOKER.

#### SALARIES OF TEACHERS IN ELEMENTARY SCHOOLS.<sup>1</sup>

THE Departmental Committee appointed by Mr. Fisher "to inquire into the principles which should determine the construction of salary scales for teachers in elementary schools" has just issued its report. The first part of the report deals with general principles, the second with the detailed application of general principles to the different categories of teachers. There is a concluding memorandum on the existing situation as regards scales of salaries. This memorandum, which, with the accompanying tables, is nearly as long as the report itself, was drawn up by the secretaries, with assistance from various competent writers.

In the general question of scales of salary, which were adopted by the early school boards I have ever since prevailed in large areas, the Committee recites the arguments on both sides, and pronounces in favour of scales. A definite scale suits the authorities, which aim at getting and retaining a constant supply of sons to whom competing careers are open; it suits the teachers, who know exactly what to expect, and receive increments as their

needs and the value of their services increase. In the absence of any definite default or wilful neglect, the increments should, the Committee adds, be receivable as a matter of right, at least up to the point representing an adequate salary. Authorities should, in constructing scales, proceed upon a common basis of principles, though the application of the same principles must produce varying results as between London and the provinces. We observe, however, that the Committee gives no countenance to the great differences usually made between salaries in urban and in rural districts. The cost of bare living is, no doubt, less in the country than in the town, but, on the whole, the cost of maintaining a standard of life appropriate to an educated man or woman is not so much less as is commonly assumed. Besides, why should the country children be permanently doomed to receive instruction from the worst qualified teachers? The point here taken is one of the most interesting and important in the report.

The troublesome question of differences of salary as between men and women is firmly handled by the Committee. It says in effect that the law of demand and supply, though it should not count for everything, should count for something, and that in this case the operation of that law is on the whole just. The Committee sees no reason for marked differences at the bottom of the scale, which, in the case of trained, certificated teachers, concerns young men and women fresh from college; but the men should be able to rise to a maximum considerably higher than that of the women.

Various other questions of general principle are discussed by the Committee. The witnesses disagreed a good deal about the recognition of superior merit by selecting the best teachers and giving them a higher maximum, but on the whole the Committee is in favour of the plan, provided the practical difficulties can be overcome. The withholding of an increment is held to be fair in some cases, provided it is purely temporary and has no effects which last throughout the teacher's career. Another very important matter is the recognition, for purposes of applying a scale, of service under other authorities. Within reasonable limits such recognition is strongly favoured by the Committee, on the ground that greater mobility amongst teachers is desirable.

As regards certificated class teachers, the men should receive annual increments for about twelve years, and the women for about eight years, and there should follow, in each case, increments at intervals of not more than three years for another period of about ten years. Time spent on college training should count as

<sup>1</sup> Report of Departmental Committee on Scales of Salary for Teachers in Elementary Schools. Vol. i. 63 pp. (H.M. Stationery Office.) (Cd. 8439).

years of service. Academic qualifications should not affect the scale, though they should count when questions of promotion or special remuneration arise. The cases of higher-grade or central-school teachers, and of first assistants, or, in mixed schools, chief women assistants, call for additions to the scale salary.

As regards head-teachers' salaries, the size of the school is not, in the Committee's opinion, the only factor to be taken into account. A limited plan of grading is desirable, depending mainly, but not entirely, on size. In some areas the schools are so much alike that no grading is necessary, whilst in small areas general scales for head-teachers are not necessary.

The cases of uncertificated and supplementary teachers are made the subject of definite recommendations, the maximum suggested for the former being about the minimum for certificated teachers, and that suggested for the latter about the minimum for uncertificated teachers. Trained teachers of domestic subjects, who have hitherto been rather hardly dealt with, should be placed on the same scale as ordinary trained, certificated teachers. Teachers in special schools should be put on the same general basis as teachers in ordinary schools, though their work is often so trying that the common practice of putting them on a somewhat higher scale is justified.

The findings of the Committee strike us as sane and level-headed throughout, and it is obvious that they are, at any rate, based upon the most careful and exhaustive inquiry. The report will be, and ought to be, subject to a good deal of criticism in detail, but its appearance marks a distinct step in advance. For the first time the whole subject has now been generally and impartially treated. Authorities have hitherto been very much at sixes-and-sevens in the matter of fixing scales, but with this standard of reference before them they will have less excuse in future.

We print below some of the more important passages in which the Committee deals with general principles :—

*The Teaching Profession.*—Teaching is by common consent a profession. Its range is wide, as it includes on one hand men and women in high and well-recognised positions, such as university professors, and on the other self-appointed teachers, and teachers with no claims to a liberal education. At the same time it suffers from the fact that its membership is not so strictly defined as is that of law or medicine. For this as well as for other reasons, historical, economic, and social, the English public have not realised its great importance to the national welfare, and have not accorded to its members the position to which their education and the importance of their work entitle them. We may, however, look forward to a time

when admission to the profession will be limited persons who have reached accepted standards of education and training, a result which will be of great benefit to national education. It is true that the position of the most numerous and important section of teachers in elementary schools is defined by the possession of a certificate; but even they will remain isolated unless the profession as a whole is organised in the manner suggested.

The efficiency of national education cannot, in our opinion, be fully secured unless all school authorities, central and local, treat fully qualified teachers in elementary schools as men and women engaged in a liberal calling, and so mould the conditions of their service as to make it possible for them to bring their work a culture as wide and deep as can be expected of their years. With this end in view, teachers should be so remunerated as to have every reasonable opportunity of maturing their knowledge and widening their horizon through study, through social intercourse with educated men and women of their own and other callings, and through travel.

*Advantages and Disadvantages of the Scale System.*—The reasons why teachers in public elementary schools are paid by scale are fairly obvious. . . . The scale of salaries defines the prospects before a teacher, determines more or less automatically questions which might otherwise create friction between the authorities and the teachers for whose salaries it is responsible, and reduces to a minimum the possibility of favouritism or unfair treatment.

*Variations in Scales from Area to Area.*—We believe it is possible to find a common basis of principles for scales in general, but we are bound to recognise that the application of the same principles in the circumstances of different areas will produce a diversity of results.

*Cost of Living.*—As salaries are fixed by the local education authorities it is inevitable that there should be some variations, but we see no good reason why differences in cost of living alone should be held to justify the offer in one town of salaries which are much less than those offered in other towns.

. . . If proper weight were given to all the factors which enter into the maintenance of a standard of living proper to a teacher, especially one having children to educate, the advantages of smaller places in point of cheapness might appear, on a balance, to be less than commonly taken for granted.

*Town and Country.*—We wish to see the country child in possession of as many as possible of the educational advantages that are available for the town child, and we should be glad to see the salary of the country teacher equal to that of his colleague in the town. We cannot hope to see such equality immediately; but we shall welcome any approximation of the lower to the higher salaries, and hope that all possible means may be taken to bring it about.

*Men and Women.*—In our view any scale of salaries whether for men or for women should offer an adequate provision, and as the schools cannot be efficiently staffed by teachers of one sex, the cases of men and women call for separate consideration. By adequately

we mean that the scale of salary offered must be good enough to attract a sufficient number of recruits suitable for the work to be done, to retain them while their careers are still open, and to secure service of the desired quality from those who adopt teaching as their life-work. The ratepayers and taxpayers of the country cannot in our view with justice be asked to undertake the burden of paying, whether to men or to women, higher salaries than such as are adequate in the sense in which we have used the word; and we are satisfied that in existing circumstances a scale of salaries which is adequate for women teachers is not inadequate for men.

*Teachers of Special Merit.*—We have given our most careful attention to the question of adding to the normal scale a system of payments, other than those for special services, which may be awarded to teachers who have reached the maximum of the normal scale and whose long and exceptionally meritorious services are thought to deserve special recognition. In our opinion such a system presents some practical difficulties, particularly in large areas; but if these difficulties can be overcome, we are of opinion that the selection of certain members of the staff who may proceed to a maximum higher than that of the normal scale may be advantageous.

*The Withholding of Increments.*—In every scale there should be an adequate salary to be reached by increments which are receivable as a matter of right by every teacher unless he is guilty of a definite default, or unless the unsatisfactory performance of his duties may be attributed to wilful neglect. . . . An authority which proposes to withhold a teacher's increment should realise clearly what it is it means to do. If a fine of £5 is to be inflicted, let that be deducted from the teacher's salary by the convenient method of withholding his increment for that year. In the following year, if the cause of offence has been removed, the teacher should be placed in the same position as regards salary as he would have reached if no fine had been inflicted; in other words, he should receive a double increment that year.

*Teachers who have Served in other Areas.*—We are satisfied that a certain amount of change in school staffs is good both for schools and for teachers. . . . Within reason some mobility in the teaching profession is to be desired, and we are aware of no educational reason why such mobility should be limited to movements of teachers from school to school within the same area. But unless the authority for the area to which a teacher goes is prepared to give substantial recognition to satisfactory service elsewhere, a good teacher is unlikely to enter the area for other than personal reasons.

Authorities will, of course, reserve power to determine as they think fit the initial salaries of any immigrant teachers as to whose efficiency or suitability there may be room for doubt. Subject to this, we think that authorities would be well advised if they decided to count, within a reasonable limit, actual service elsewhere which is satisfactory as if it had been service in their area.

*Probation.*—We do not think that the fact that a teacher's appointment is on probation should affect the application of the scale to that teacher, and we strongly recommend that the ultimate position of a teacher on the scale should depend upon the total of his confirmed and probationary service.

*Superannuation and Disablement of Teachers.*—It is clear that those who have to arrange a salary scale for a long-service calling must have some regard to the arrangements which exist for superannuating those who come under the scale. The Elementary-school Teachers' Superannuation Acts . . . apply only to certificated teachers. . . . We are informed that no pension has yet exceeded £69 6s. 4d. for a man, or £59 os. 4d. for a woman. The average amounts of the retiring allowances commencing in 1916-17 were £60 for men on an average service of forty years, and £49 for women on an average service of thirty-eight years. It is evident that the maximum pensions we have mentioned do not in themselves constitute a sufficient provision for the old age of a teacher, so that those teachers without private means who seek to assure themselves a reasonably comfortable existence in their declining years will have to do so out of their incomes in the course of their working lives. Moreover, the scheme makes no provision for a teacher's dependents in case of his or her death in the service, a specially material consideration for a man teacher who undertakes the responsibility of marrying and bringing up a family. . . . In considering whether a teacher's salary is adequate in relation to his or her needs, it will therefore be necessary to bear in mind that until the present superannuation scheme is improved teachers in most areas will have to make out of their salaries some further provision for old age or disablement, and some provision for the contingency of early death.

*The Application of Revised Scales to Existing Teachers.*—Excessive immediate rises in salary from the maximum of an old to that of a new scale might be avoided by raising the maximum year by year until the new figure is reached. Similarly, if the transition from present salaries to those which will be accorded when the new scale comes into full operation entails advances which would be excessive if made in one step, the case might be met by a provision that no rise should exceed a certain sum in any year; but care would have to be taken that newly appointed teachers were not more liberally treated than the existing staff.

Again, teachers who were originally appointed at low salaries are not in every case the right persons to be remunerated at the much higher rates which may for the future be assigned to their posts. A teacher underpaid at £110 may be overpaid at £200. . . . It would not always be equitable to pay such teachers at rates which would secure much better candidates at the present time. If serious overpayments are to be avoided such cases as these will require careful consideration, and while we hope that authorities will consider sympathetically the cases of all older teachers, we think that the upper ranges of revised scales should not of necessity be open to them without an extended review of their work.

## GEOGRAPHICAL ASPECTS OF THE CHANNEL TUNNEL.<sup>1</sup>

ONE of the fascinations of geography lies in the visions of future possibilities when some great change in man's arrangements is about to alter the relative values of the countries of the world. Such a vision is presented by Sir Francis Fox in his address to the Royal Geographical Society on the "Geographical Aspects of the Channel Tunnel." London to Hong-Kong by train in a fortnight; London to Sydney almost entirely by train within the month; to Paris but a six hours' run—these ideas conjure fantasy after fantasy. Troop trains at ten-minute intervals, a constant stream of war material, and, better still, the comfort of the hospital train for the return journey of the heroes—these are visions which belong to the realm of what might have been. The *Entente* bids fair to bring the tunnel within the range of probability for constructive work after the war. Other minds may think that the suggestion comes too late, for the following reason: Traffic through the air is in its infancy, and the construction of a tunnel may perchance be wasteful because it might try to hold back the clock of progress by sinking needed funds in an enterprise which may fundamentally belong to the past and not to the future. These are visions of the years to come; let Sir Francis Fox propound his view of the next decade or so.

It is an established fact that England and the Continent at one time formed continuous land, and that the geological strata on both sides of the English Channel are identical. The beds, their thickness, the dip, the formation, are similar in all respects; and the outcrops of the various strata have been surveyed by several thousand soundings and borings, made over the entire distance between England and France.

In bygone geological ages a great river flowed along the line of what is now the Channel. On the Admiralty chart of the Channel there will be found a very remarkable ravine north of Guernsey, called the "Hurd Deep," or "La Grande Fosse." This ravine in the sea-bed extends for a distance, from east to west, of about seventy-five miles, with an approximate width of three miles. The depth of the British Channel north and south of "La Grande Fosse" averages from thirty-four fathoms to thirty-five fathoms, but the soundings in the ravine itself rapidly increase until they reach 110 fathoms. This ravine is nothing less than the remains of the great river of past geological ages, which was an active agent in eventually separating the two countries.

The white chalk cliffs of England and of France in the neighbourhood of Cape Grisnez rest upon a lower bed of Grey Chalk, the "Cenomanian," some 200 ft. in thickness; and this in its turn lies upon a solid bed of Gault. Both beds are very suitable for tunnel construction, being almost, if not wholly, impervious to water, the mixed material of which they are constituted bearing a close analogy to that employed in

the manufacture of Portland cement. The grey chalk was doubtless at one time white chalk, and was then water-bearing—but from some undefined cause the bed became saturated with liquefied clay, which percolated into it and "choked the filter," thus rendering it water-tight.

In deciding upon the actual route of the Channel tunnel the one great precaution which has to be, and has been, taken is to keep the work well within the thickness of the Grey Chalk; but as the line may, near the two coasts, have for a short distance to run out of this bed, it is so arranged as there to enter the Gault, which is another equally good and water-tight material. Owing to the observance of these precautions the tunnel will not make a "bee line" from England to France, but the slight sinuosity or curve introduced is otherwise of no importance.

In the Channel above the sea-bed the maximum depth of water would be from 160 to 180 ft., and as we shall be asked to leave undisturbed such a cover of chalk over the roof of the structure as will guard against any possible hostile contingency, this solid protection has been fixed at a minimum of 100 ft.

The tunnel would consist of two tubes, as in the case of the great Simplon tunnel (12½ miles in length) in the Alps. The reasons for adopting twin tunnels are numerous. They include better facilities for ventilation, drainage, repairs to the structure and permanent way when required during traffic, as well as greatly increased safety in case of derailments. But one special reason for adopting the system in the case of the Alpine tunnel—where 7,000 ft. vertical of material exists above the work—was the reduction of pressure on the arch and side walls. This great load will not, however, have to be provided for beneath the English Channel.

It is proposed that the work of excavation shall be performed by revolving cutters, fixed in Greathead shields, by which system a rapid rate of advance will be attained, the débris being removed from the "face" by high-speed endless belts. These will be so arranged as to deliver their load direct into wagons without the necessity of shovelling or of manual labour.

All the work will be carried on by electrically driven machinery, by which the volume of air required for ventilation will be greatly reduced, and arrangements will be made so that excavation and other operations can be carried on simultaneously at many points, thus abbreviating the period required for construction.

The diameter of each tunnel should be 18 ft., so as to accommodate main-line rolling stock. At intervals of 200 yards along the entire length oblique cross-tunnels will be formed, to enable empty wagons to be brought in by one line and full wagons despatched on the other, and also to permit a most excellent system of ventilation to be installed. Foul air should be considered as a slur on the management, as unfair to the workmen, and injurious to the progress, in addition to its being an unnecessary expense to the company.

The tunnel could be worked, ventilated, and pumped by electricity supplied from a power-station in Kent, possibly ten miles inland. The problem of ventilation when regular traffic is running will consequently be

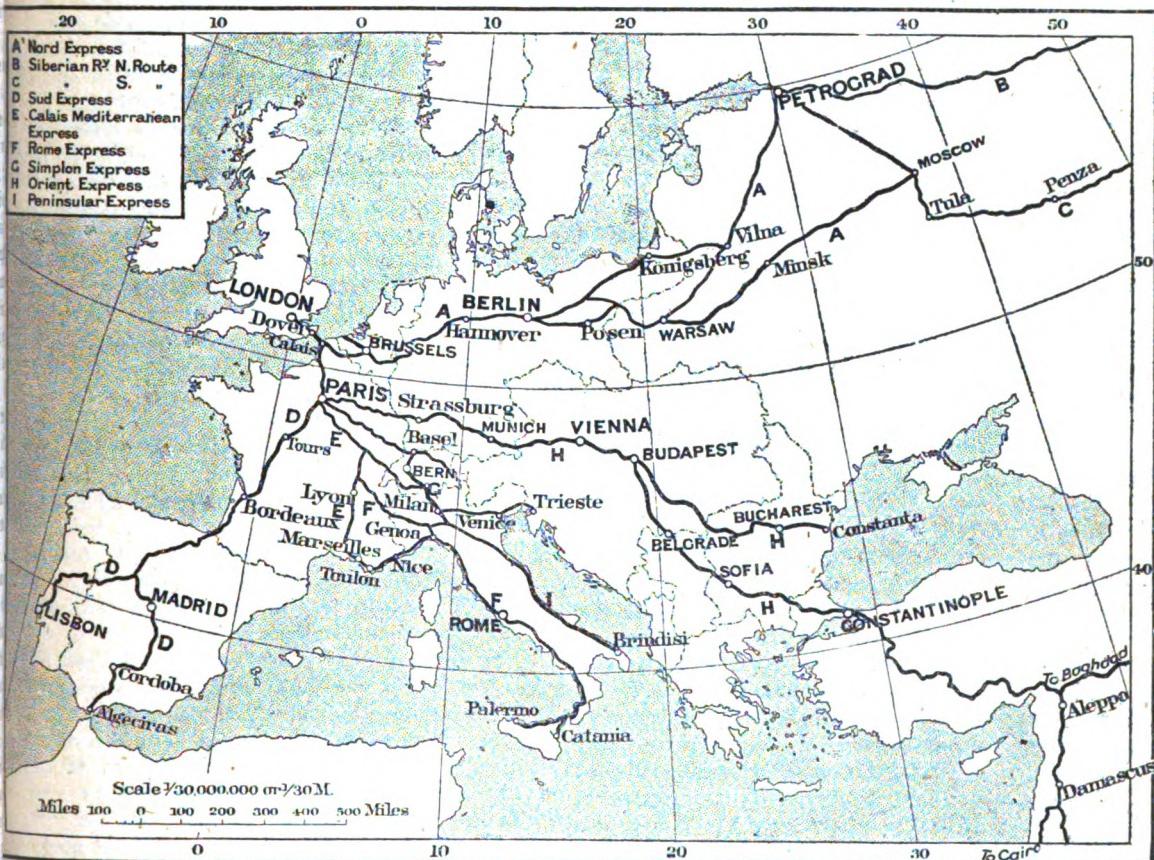
<sup>1</sup> Abridged, with permission, from a paper read by Sir Francis Fox, M.Inst.C.E., at the meeting of the Royal Geographical Society, April 23rd, 1917, and printed in the *Geographical Journal* for August, 1917.

comparatively simple, no combustion of coal on the railway being necessary. The tunnel would be maintained under the authority of the War Office, and a dip in the level of the rails, forming a "water lock"—which the tunnel could in case of emergency be filled with water from floor to roof for a length of mile—would also be under the control of the commandants of Dover Castle and the neighbouring forts. His water would not injure the tunnel works, and it could only be pumped out by the energy developed at the power station inland. Entrance and exit of both tunnels would likewise be under the gunfire of all the forts and of vessels in the naval harbour of Dover. The gauges of the English and French railways are

the pre-war traffic from *all* Continental ports to England and *vice versa* did not exceed 1,600,000 passengers a year as compared with 4,000,000 travelling between France and Belgium and 4,000,000 between France and Germany.

The probabilities are confidently anticipated by Baron Emile d'Erlanger, chairman of the Channel Tunnel Company, that the traffic will, as the result of the opening of a submarine railway, double or treble itself, not only as regards passengers, but also in respect of perishable goods requiring prompt delivery; and that the financial return upon the capital expended will be highly satisfactory.

It is not necessary to dilate further upon either the



Sketch-map to illustrate express services from London by a Channel Tunnel.

very similar, as is proved by the fact that at the present time hundreds of the largest English and Scottish comotives, with thousands of trucks, are running in regular traffic on French railways, rendering invaluable service in the transport of the Allied forces. Trains would be run direct from London to Paris in fewer than six hours, and these could, if required, travel at a "headway" or interval of not more than five to ten minutes.

Doubtless in course of time more than two pairs of trains will be required to deal with the enormous volume of traffic which must inevitably develop in each direction. It should be remembered that, owing to distance of the Channel crossing, our Continental neighbours never go on shipboard if they can avoid it, and

geological or the engineering side of the question, and although much could be said on both, the geographical considerations will now be dealt with. These, however, will to some extent be affected by the extraordinary difference of gauges on the various railways which exist in the world—varying from 5 ft. 6 in. to 2 ft. Probably many of these will be altered to what may become practically the standard gauge—whilst in other cases a transhipment of passengers and goods, say once in a thousand miles, will minimise the inconvenience. One, however, cannot forget the delay and discomfort caused by the difference in gauge already existing at the Russian frontier stations on arriving from France, Germany, or Turkey.

So soon as trains can pass under the Channel they

will be able to traverse France, Belgium, Holland, Spain, Italy, Germany, Austria-Hungary, and Turkey as far as Constantinople without any difficulty as to gauge or minimum structures. The Orient Express connection formerly left London at 9 a.m.; an inconvenient hour for many; but so soon as the Channel tunnel is an accomplished fact it could be arranged to leave at noon and still depart from Paris at the usual hour. It would pass through Germany and Austria-Hungary to Bucharest, or through Bulgaria to Constantinople. A quarter of an hour later a train would leave Charing Cross as the Nord Express for Brussels, Berlin, and Königsberg to Petrograd, and for Warsaw, Minsk, and Moscow, where it would correspond with the Siberian Railway Express to the Far East, and provide communication also with the charming and healthy watering-places in the southern Crimea, where great developments are taking place. At further intervals of a quarter of an hour the Rome Express would leave for Paris—the Riviera, Rome *via* Turin and Milan, and Brindisi; followed by the Sud Express to Paris, Bordeaux, Madrid, Algeria, on one hand, or to Lisbon on the other. Communication would be provided not only with Belgium, Holland, and Denmark, but also with Finland, Sweden, and Norway *via* Torneå.

This wonderful network of railways deals only with Europe, but far greater developments are possible. From Petrograd and Moscow trains already run through the Ural Mountains, traversing Siberia—eventually reaching Peking and the Chinese system of railways—and to Vladivostok, in thirteen days from London. Some fifteen years ago a great extension of the Siberian Railway was advocated as "The Trans-Alaska Siberian Railway." Starting from the Trans-Siberian at Irkutsk, and skirting the north shore of Lake Baikal, it would run to East Cape, the most easterly point in Asia, at Bering Strait. At the same time an extension of the Canadian and American system of railways was to be built from Vancouver to Dawson City, going due west to Cape Prince of Wales, the most westerly point of the North American continent. There would still remain a gap in railway communication at Bering Strait. Plans and estimates of a proposed tunnel beneath this strait have been mentioned, and two islands exist on the centre line of this projected work which would enable construction to proceed from six different points. The total length of the tunnel was said to be thirty-eight miles; and, indeed, well-known gazetteers like those of Lippincott and Chisholm give thirty-six miles as the width of the strait. But the Admiralty chart and Findlay's "Northern Pacific" make it about fifty-six miles instead of thirty-six. A tunnel under Bering Strait is therefore impracticable, at least to present ideas of engineering.

The western terminus of the Bagdad Railway (4 ft. 8½ in. gauge) is at Haidar Pasha, near Scutari, on the Bosphorus, where some means of communication will be required to connect what is now Turkey-in-Europe with Turkey-in-Asia. The details of this necessary work will demand much consideration; for although a tunnel, a bridge, or a ferry has each its own advocates, there are many points requiring to be

weighed carefully. The last-named proposal, a ferry, is free from the all-important objections to a Channel ferry—there being no tide with all its complications, and no such tempestuous weather as is met with in the English Channel. The Bagdad Railway then traverses Asia Minor and the Taurus Mountains, where one hundred tunnels are required, all of which are not yet finished. It then passes to the north of the Gulf of Alexandretta, with its fine harbour, through Killis (the junction for the Syrian Railway and Mecca towards Mosul and Bagdad). The development of Mesopotamia as one of the great granaries of the world, when the necessary barrages and dams, the drainage and irrigation works are in operation, will inevitably be accelerated by the railway; and the British oil pipe line in Persia will be accommodated. The railway will have to be extended to Basra and Koweit, and passing round the northern end of the Persian Gulf will reach Karachi, and thus get in touch with the whole of the Indian system of railways. At Killis, previously mentioned, is the junction between the Bagdad Railway and the existing Aleppo-Hama-Homs of the same gauge; and with the Hedjaz Railway (3 ft. 5½ in.; 1.05 metres) connecting Damascus and Medina; junctions will be (or are already made with the railway from Jaffa to Jerusalem (1.00 metre gauge), which would have to be widened—also with the Beirut and Damascus Railway (1.05 metres gauge). From the Aleppo line at Rapsheba, a direct line to Cairo already exists as far as Beersheba, and from an adjacent point the railway at present being made by the British Army from the Suez Canal to Gaza will be available. This will be 4 ft. 8½ in. gauge, and from Aleppo to El Kantara, on the east bank of the canal, the distance will be 420 miles. The canal would have to be tunneled or provided with a lifting bridge or a ferry, and thus connection would be effected with the entire system of Egyptian State Railways.

The projected and partly constructed Cape to Cairo Railway would eventually carry on the system to the Victoria Falls, Bulawayo, Johannesburg, and the Cape; and it would follow as a natural corollary the Uganda Railway, as also the East African and West African lines, would be joined up eventually with it.

I am informed that surveys have been made for a railway from Irkutsk through China to Hong-Kong. Were this to be built, the time from London to Hong-Kong would probably not be more than fifteen days as compared with thirteen to Vladivostok. Or Singapore could be reached in about the same time if the Indian and Burmese lines were to be connected with those of the Malay States. Either of these routes would very materially reduce the sea passage between England and Australia; and when the transcontinental railway is built the London mails could probably be delivered in Sydney well within thirty days from London.

It may seem to us of to-day a very remarkable prospect, but by no means impossible of realisation, that within a comparatively few years travellers from London will be able to reach such distant places as the

of Europe, the most eastern parts of Asia, and South Africa, India and China, without the railway systems of the world, through the sum of the Channel tunnel; this will offer a very incentive to travelling to regions at present only regarded as being within the bounds of possibility.

## THE PROBLEM OF CONTINUED EDUCATION.

The Uplands Association and its committee have engaged for some time upon the problem of continued education, and the following are among the conclusions at which they have arrived. All programmes for continued education should be based on recognition of the changes in mental outlook accompanying the onset of adolescence. For while these changes characterise all normal adolescents, the youth who earns wages undergoes a special transformation as the result of his partial economic independence. Local authority, in claiming control of the adolescent up to eighteen, should provide for individual knowledge and interest in each young person. This can be done by putting him under the care of a supervisor or tutor. The class instruction (320 hours a year) the actual amount proposed in the Education Bill) to be imposed by authority will often be given directly by local education authority, but it may partly be arranged either in a workshop or in a scout troop, a "lads' club, or a religious institution. Such action should be recognised, and, if possible, aided, by State.

The two upper standards of the public elementary school, reorganised so as to include all pupils who have reached the age of twelve, should be adapted to fit in with the scheme of part-time instruction and revision after fourteen, for the years from twelve to fourteen constitute a time of transition from childhood to youth. This reorganisation would be of advantage in other ways. First, twelve is the age at which children ordinarily leave the public elementary school for new experience of a trade or domestic economy or a secondary school; for those who are left behind some change of school conditions is necessary, in corporate life and in curriculum; the new conditions can be extended and made effective by reaching eighteen, providing what in principle will be found to be secondary education for the wage-earner. Secondly, as soon as public opinion warrants the extension of full-time compulsory education to fifteen, can be carried through without disturbing the existing system. Many of the teachers in this revised upper section of the public elementary school could serve also as supervisors or tutors to youth, but in event they would co-operate with the voluntary societies through which many young persons of both sexes will continue to find opportunity for development. The insistence in the Bill upon physical training is to be welcomed, together with the prospect of holiday or camp. Technological instruction is a necessity to enable the youth to find in his occupation something more than wages. The choice of fit persons to be in charge of youth is by far the most important

factor in the problem. Many of these can be found among the professional teachers now engaged in elementary, secondary, or technical schools; especially those who by working in continuation classes have gained a first-hand knowledge of wage-earning boys and girls.

## ITEMS OF INTEREST.

### GENERAL.

BEFORE this number of THE SCHOOL WORLD is issued, the London Education Committee will have considered the report of its Teaching Staff Sub-Committee on the question of teachers' salaries. The report covers sixteen closely packed foolscap pages, which is not to be wondered at, considering the vast and complicated London service. The general principles upon which the scales are constructed seem to accord pretty closely on the whole with the findings of the Departmental Committee, set forth in another part of this issue. For example, it is proposed that certificated assistants shall proceed as a matter of right to what is presumably regarded as a competency (£240 for men and £177 for women), and that those who are considered to have rendered, and to be rendering, "thoroughly satisfactory service" shall be allowed to proceed to a higher maximum (£300 for men and £210 for women). Again, in order to attract young teachers who have gained valuable experience outside London, and thus to promote what the Departmental Committee calls greater mobility, an allowance is proposed of six years of outside service on the same scale as if such service had been rendered in London. The scales proposed are, of course, higher throughout than are to be expected in any provincial area.

THE recently issued class lists of the Cambridge Local Examinations held in December last show that the total number of candidates entered was 7,137, exclusive of 5,505 candidates who were examined at Colonial centres. In the senior examination 572 boys and 687 girls satisfied the examiners, 48 boys and 24 girls being placed in the first class; 316 boys and 197 girls showed sufficient merit to entitle them to exemption from one or both parts of the Previous Examination. Of the junior candidates 1,254 boys and 804 girls passed, the numbers of those placed in the first class being eighty-one and nine respectively. In the Preliminary Examination 899 boys and 585 girls passed.

THE British Science Guild has circulated a report on the Education (No. 2) Bill. The Guild expresses its approval of the following provisions made in the Bill:—(1) The general development and organisation of all forms of education other than elementary; (2) practical instruction for all elementary-school children, provided that such teaching does not involve direct instruction for a trade; (3) continuation schools and compulsory attendance thereat for 320 hours per annum; (4) co-operation of local education authorities, particularly by means of the formation of federations, chiefly because many local education authorities are obviously unable to deal adequately with higher educa-

tion; (5) the removal of the 2d. rate limit for higher education in county areas; (6) abolition of exemption from attendance at school between the ages of five and fourteen; (7) further restrictions as to employment of children; (8) school holiday camps, centres for physical training, playing-fields, school baths, school swimming-baths, etc.; (9) the extension to secondary schools and other provided schools of the powers and duties of local education authorities respecting medical supervision and treatment; (10) aiding teachers and students in carrying on research; (11) the collection of information respecting schools and educational institutions not in receipt of grants from the Board of Education.

THE British Science Guild recommends that provision be made in the present Bill:—(1) To compel local education authorities to provide nursery schools in those districts where the Board of Education deems such schools necessary; (2) for the inspection, by an approved authority, of all schools not now liable to inspection, whether a request for inspection is made by the school authorities, or not; (3) for the adequate registration of all schools and other educational institutions.

HIGHLY technical and semi-popular articles are judiciously mingled in the January issue of *Science Progress*. Dr. Joseph Reilly and Prof. W. N. Rae contribute a very useful description of various methods of determining the density of liquids, an operation of the highest importance in numerous branches of research. A few diagrams would have enhanced its value. Dr. J. C. Willis's recent theory of the geographical distribution of plants, known as the "age and area law," is explained by Mr. James Small. Dr. K. M. Parker writes on the structure and development of the hypophysis cerebri, or pituitary body, which was at one time supposed to be the seat of the soul. Students of zoology will find this a useful summary of the present state of knowledge of a still unsolved problem. A more general appeal will be made by Mr. J. Reid Moir's article on "Pre-Palaeolithic Man in England." The author maintains that the antiquity of the famous Piltdown remains is enormously greater than has been supposed, and denies that there is any reason for supposing the human race to have originated in Asia. Prof. W. C. McC. Lewis contributes a first instalment of a "popular science" article on "The Structure of Matter," which will repay a careful study by senior students of physics and chemistry. The usual full summaries of recent advances in science, notes and reviews, and a letter from Lord Leverhulme on the abolition of slums are other valuable and interesting features of the journal.

THE issue of *School Science and Mathematics* (vol. xviii., No. 1) for January contains a detailed account by Prof. Roger Adams of the efforts made in America to meet the shortage of chemicals and drugs arising from the war, and references to the chemistry of gas-warfare are particularly interesting. An excellent contribution on "Pascal's Mountain Experiment," including some of the contemporary correspondence, and another article on the determination of the electronic charge  $e$ , deserve special mention. Some useful ideas

may be obtained from an article on "Logarithms: Some of their Applications for High-School Pupils."

THE November issue of the *Education Review* of New York contains a suggestive article on "The Big Brother Movement in the High School." In English secondary schools the scholarship boy—an increasingly numerous element—is often very lonely; and the article conveys ideas as to how his loneliness may be remedied, and, further, how his failure to get the best out of his scholarship course, because of his apparent isolation, may be removed. The teacher of English drops a note to the head of the Big Brother Organisation that John F.—is lazy, indifferent to his work, etc. John, sixteen, tired of school, and wants to leave. A machine is set secretly to work. Capable bigger boys speak to John; a member of the "footer" team asks John why he does not try for a place, John's circle of acquaintances grows, his eye grows brighter, his time more neatly arranged, he shuffles no longer. Consider another case. A certain class habitually rags a teacher who is a substitute. The organisation is formed, the bigger boys, responsible Big Brothers, engage members of the class in conversation and put the situation to them in a different light; the ragging ceases, and the lady, relieved of disciplinary trouble, teaches well and gains the loyalty of the class. Ideas behind the movement have been tested, and successful results are fully recorded in the article, which we commend to English schoolmasters—headmasters particularly.

ALL the money in the world cannot take the place of wheat for food. This fact dominates the world situation, and the *Review of Reviews* for November, in its customary survey of the matters of moment the world over, directs attention to two areas where the best use is not being made of the possibilities of wheat cultivation within the Empire. Ten million acres of land, capable of producing 150 million bushels of wheat, are lying idle in Manitoba, Saskatchewan, and Alberta, because the profits which would accrue from the cultivation of wheat thereon would be too small. The quantity of wheat in question is a quarter of the normal English crop. In India, the total normal yield is five times that of England, on an average yield of 11 bushels per acre; if the yield were increased generally to 12 bushels per acre, the increase would equal almost half the annual normal English crop. Are the Canadian and Indian Governments attending to these possibilities? Facts of this kind are familiar to teachers of geography, but geography has been neglected in schools so perhaps our bureaucrats are not awake to the possibilities of the situation.

RUSSIAN was taught last year at Cheltenham, at Leys School, Harrow, Oundle, Bradford, Cardiff, and Liverpool, and the October issue of *Modern Language Teaching* contains reports on the year's work from these centres. One writer avers that a two-year course for boys in the upper forms, with at least four periods a week, should suffice to give them a fair knowledge of the language. Russian should not be the first foreign language attempted as one opinion holds, while another writer recommends five or six periods a week at an early age in order to make the acquisition

ussian an enormous help in learning other languages, such as French or German. A report of the Conference of Teachers of Russian includes a copy of a paper by Mr. Raffi on graded Russian intended to cover three years of study. It was agreed that the desirable qualifications for a teacher of Russian were (1) ability to speak standard spoken Russian; (2) possession of an education not lower than that of a secondary school; and (3) a knowledge of English, combined with general experience in teaching modern European languages.

G. G. CHISHOLM contributes to the November number of the *Journal of Geography* of Wisconsin an article, "The Metal Resources Employed in the British Iron and Steel Trade," which is based upon and supplements the "Report on the Resources and Production of Ores and other Principal Metalliferous Ores in the Iron and Steel Industry of the United Kingdom," published by H.M. Stationery Office (2s.). The production of pig-iron in the United States, Germany, and the United Kingdom—the three chief producers—ranks almost precisely in the proportion 1:1. The October issue of the same journal, in an article on the preparation of geographical teaching material, contains a useful suggestion for prolonging the life of maps used frequently by the pupils. Mount the map on linen in the usual way, and while the map is still wet, lay it on the mounting board, and after it has become dry, varnish with a thin coating of white shellac. The varnish should be thin enough to spread readily. It may be applied with a soft brush of moderate width. Cut off the corners of the map with scissors before applying the varnish. The varnished surface may easily be cleaned with damp cloth.

Under the title of "The War and the Schools," the Ontario Department of Education has issued a booklet of special regulations for the school year 1918, including suggestions as to courses and examinations in history and geography. Ever since the autumn of 1914, the teachers of the province have been made responsible for enlightening their students as to the "causes and the interests at stake, as well as the relations thereto of the different nations directly or indirectly concerned" in the war, and the teacher now acknowledges with pleasure the zeal with which that responsibility has been discharged. Now that the war is in its fourth year, and events seem to crowd upon one another, the duty becomes more difficult of fulfilment. To assist the teachers, the Minister has accordingly issued an outline syllabus, which is, however, to be regarded as suggestive only. The syllabus sets forth briefly (1) the causes of the war; (2) the immediate causes; (3) chief events on the various fronts; (4) the share of the Overseas Dominions; and (5) the entry of the United States and other Powers into the war. Suggestions for supplementary reading, and for modification of the syllabus to suit schools of different types, are also given.

The *Education Gazette* for September 20th last gives the Ordinance of the Cape of Good Hope relating to teachers' salaries and pensions.

Assistant-teachers are classified in three grades, according to qualifications and class of work undertaken and independently of the school in which they serve. The salaries are: for men, £120-£267, £160-£322, and £220-£430; and for women, £100-£190, £120-£210, and £160-£265. The increments are annual, large for the first three years, and smaller for the succeeding twelve years. In primary and intermediate schools with fewer than 150 pupils the principal's salary is £10 or more higher than the salary the principal would receive as an assistant. Principals of other primary schools range in salary between £265 and £450, on scales with ten annual increments. In larger intermediate schools the principal will receive between £320 and £500 on scales with ten annual increments. The principals of higher schools will have salaries between £400 and £700 on scales with fifteen annual increments. The figures refer to men's salaries; the salaries for women principals of large schools are: primary, £180-£310; intermediate, £230-£320; and higher, £260-£410. Pension contributions are one per cent. of the salary. The Ordinance contains complete details of the status and conditions of service of teachers.

An article, "Geography in Practice and in Theory," in the *Educational Review* (New York) for January comments upon the present-day teaching of geography in the United States. Practice lags behind theory, and widespread use of any principle of education lags behind experimental practice. It is concluded that there has been no general attempt to substitute thought-provoking questions which involve fact for the fact questions. Geographical teaching as a rule is not progressive; the type of test question used in early years is used also in later years. The problem method of treatment is not in general use, and the author, Prof. R. M. Brown, of the State Normal School, Providence, R.I., commends an examination paper in which the use of the text-book is permitted. A consistent development in the geography work is lacking, especially in the highest-grade school work.

An article on "The Growth of Native Female Education in Bengal" is included in the *Educational Review* (Madras) for October. The first ladies took the B.A. degree of Calcutta in 1883; there had been slight progress before that date, and in 1891 it was officially reported that the girls in school do obtain a certain amount of real education. Teachers were scarce for many years, and it was not until 1902 that signs of improvement became manifest. Even at the present time, although the education authorities state that there is no prejudice against the education of girls, the shortage of efficient teachers is the main difficulty.

PROF. H. H. MOORE, of Reed College, Portland, Oregon, has obtained useful results from a questionnaire addressed to high-school boys about the prevalent social evils, and the attitude and knowledge of the boys regarding them. His work is described in "The High-school Boy and Modern Social Problems," in the New York *Educational Review* for October. A social evil was defined as anything which causes human suffering, and the two chief evils reported were the

liquor traffic, and questionable personal habits, such as smoking, attending dance-halls, and loafing. The various sex evils were third, but were only recorded by half the boys. Dishonesty in business and public life was tenth on the list. More than a third of the boys, who are about to enter college or to go to work, averred that they did not know the meaning of the terms economics and sociology. In reply to the question, "How long do you think the U.S.A. will survive as a great nation?" two-fifths of the boys expressed the opinion that the nation would endure for ever or indefinitely. The boys were asked questions pertaining to their views of their future vocations. Two-thirds were definitely individualistic, e.g. they wanted to get rich; the others were socially inclined, e.g. they desired to do good in the world. Sixty per cent. wanted a college education, all but nine of them for individualistic reasons: "So I may get a better job," "For my own welfare," "The business world looks on the college man as a very polished and efficient man." Prof. Moore uses these results as a plea for more attention to sociology in the high schools. A noble army of men and women in many walks of life is now combating the social evils that threaten the State. A larger force is needed if the warfare against poverty, crime, and disease is to be waged with success. Never has there been greater need for men who will give up selfish pursuits and direct their attention to the welfare of the community.

Civic studies loom large on the educational horizon. In the *School Review* of Chicago for October it is suggested that a school course in English can do much towards inculcating the ideals of citizenship by attention to a systematic use of civic subjects for essays. The scheme planned by Mr. Z. E. Clark, of Chicago High School, deals with "myself, the house I live in, the street in which I live, my neighbours, the beauty of our neighbourhood, the location and history of our city, transportation, what our city produces, our city's government," and leads to observation and thought by the child concerning the *milieu* in which his life is passed. The appeal is strongly personal, and suggests a steady growth of the pupil's capacity to understand what citizenship means. Needless to say, these essay subjects should not exclude recourse to the numerous subjects of literary, historical, and imaginative interest, but they may supersede the casual attention to local affairs which is betrayed by the occasional choice of subjects dealing with community affairs. The main idea of the scheme is a graded, systematic survey of the child's locality.

THE October issue of *Indian Education* gives the results of measurements of schoolboys at the Secondary Training College, Bombay. Boys of nine weighed, on the average, 50 lb., and were 50 in. in stature; comparative figures for Scotland and Boston give a similar height, but a weight of 60 lb. Boys of thirteen in Bombay were 57 in. high, equal to Scottish boys, but not quite so tall as the boys of Boston, while the Indian boy weighed but 70 lb., as against 83 lb. and 88 lb. for Scotland and Boston. The comparative decrease in stature increases with age, until at eighteen the difference amounts to 3 in., and while the Indian boy weighs

only 103 lb., the Scottish and American boys weigh 30 per cent. more. The number of boys examined in Bombay is small, but the consistency of the results indicates that age for age the Indian boy is slightly shorter in stature and of considerably less weight than those of Scotland and Boston. Can it be that the Indian schoolboy suffers from the comparative absence of meat in his diet?

COMPULSORY primary education for boys is to be made possible in the Bombay Province. The municipality may make provision for primary education and then declare such education compulsory within the municipality. At present this administrative power is conferred upon the municipal authorities on the understanding that no extra expense will fall upon the Provincial Government. The Bill makes provision for the issue of attendance orders by magistrates, for penalties upon those who employ children in contravention of the Act, etc. This progressive step will, in the opinion of the editor of the *Educational Review* (Madras), lead to the other provinces. Madras and the Punjab have already moved in the matter. The urban populations which will be affected are small; in Bengal 6 per cent., Madras 12 per cent., and Bombay 15 per cent. of the people live in the municipalities; and it is hoped that this modest beginning is but the prelude to greater progress. The main fact of importance is the recognition by the Government of India that compulsory education is desirable.

#### SCOTTISH.

LORD HALDANE, in addressing the secondary school-teachers of the West of Scotland on January 26th, said that his main interest in public affairs to-day was education, centred, apart from the exigencies of the war, in the training of the rising generation depended the future of the Empire. The Scottish Education Bill was constructed on great lines, and clearly had in view the calls upon the initiative, knowledge, and capacity which would be made on the citizens of the future. The question of the abolition of school boards had aroused much controversy in Scotland, and the decision must well be left to the strong good sense of the people. For his own part, he favoured the county-council system, as he believed that by making education a part of their duties, they would not only arouse a keener interest in education itself, but also improve and strengthen the composition of these parliaments. Scotland would do well to note the remarkable progress that had been made in English education since the passing of the Act of 1902, a progress that would never have been obtained under an ad hoc authority.

CONTROVERSY still rages round the question of ad hoc or non-ad hoc authority in education. The question, which, after all, is one merely of machinery, has drawn the whole fire of criticism on the Bill. The purely educational provisions, far-reaching as some of them are, have been left severely alone. The ever the way in the case of Education Bills. Education proper has but little interest for the majority of the public, not so much because they do not

because they do not understand it. Its machinery, however, they think they do understand, and so on occasion like this the gargoyles of self-constituted opinion begin to spout. Clergymen, who regard themselves as educators by tradition, have been the vocal. As almost every school board contains two or three on its membership, antagonism to the Education Council authority is the predominant note in their utterances. Scottish education owes a deep debt of gratitude to its clergy in the past. They strove and fought for education when Government and people were both apathetic, and no true educationist will now gainsay the part they are playing in the present controversy, even though their views are generally opposed to the present Bill. They have been shorn of many of their ancient privileges that it is but natural they should put up a strong fight to retain their power over a province where they once reigned supreme. He wishes the link between church and school to be severed completely, but the connection must be on certain terms. The school will accept their help as helpers, not as patrons. On these conditions they welcome the closest co-operation in the great work of training the rising generation.

The Educational Institute in co-operation with the Historical Association of Scotland has been engaged some time in preparing a syllabus for the intermediate history course in Scottish schools. The committee specially charged with this work had before it the following aims:—(1) To exhibit in outline the development of the country's history; (2) to ensure that each pupil has been taken through an adequate course of historical study, looking to the fact that the majority of pupils leave school at the close of the intermediate stage; (3) to indicate such a scope of work as could be covered and revised in a three years' course of twenty-four hours per teaching week; (4) to leave to the teacher complete liberty in the treatment of his subject, and the expression of his own individuality. The report, which is, we believe, the first of its kind in the country, reflects great credit upon the committee responsible for its preparation. It is a remarkably clear document, and keeps rigidly in view throughout the capacity of the pupils and the limitations of each teaching time. The report, which is issued to the public as a booklet of twenty-five pages, with illustrations, may be obtained at the Educational Institute, 34 North Bridge, Edinburgh, price 6d. (post free, 7d.).

The council of the Educational Institute has prepared a memorandum on the proposed new regulations for the Indian Civil Service. The fear is expressed that the lowering of the age for entrance will seriously affect the supply of Scottish candidates, but it does not feel justified in opposing this provision in view of the unanimous finding of the recent Royal Commission. This step was urgently required in the best interests of India. The memorandum, however, takes a strong attitude in regard to the conditions for the proposed competitive examination. It points out that the normal curriculum in Scottish secondary schools does not allow of specialisation in any of the groups provided in the new regulations. To give equality of

opportunity to all parts of the United Kingdom it is suggested that a new group comprising English, mathematics, and a foreign language should be recognised.

REPRESENTATIVES of secondary education committees from thirteen counties with a large rural population waited upon the Secretary for Scotland to protest against the method of allocating the new grant of £140,000 for secondary education. By this some counties received more money than they required, while others, and these for various reasons the most necessitous, failed to obtain sufficient to carry on effectively the work of education in rural areas. The money was intended mainly to further higher education in these areas, yet the bulk of it went to those who had no rural problem. Mr. Munro, in his reply, said that the present method of allocating the money was arrived at by agreement among all the counties in 1912. He admitted that the method was not ideal, but the new Bill, if adopted, would remove almost all the anomalies and inequalities complained of.

#### IRISH.

THE Government has at last presented to Parliament rules for the application of the proposed grant of £50,000 for the purpose of intermediate education in Ireland. The grant is Ireland's equivalent of the new Treasury grant made to English secondary schools under Mr. Fisher's scheme. Concerning the amount two things may be said. First, Irish secondary education is not receiving its equivalent for the Treasury grant already being paid to English secondary schools; if it did so, it would receive at least double the proposed amount. Secondly, Mr. Fisher's grant to English schools will not remain fixed at its present amount, but the Irish grant is fixed. The rules state, first, that £2,000 may be spent in courses of instruction for teachers; and, secondly, that £5,000 may be applied in making advances to schools for building and equipment. The rest of the grant is to be distributed every year as a capitation grant to schools payable on all pupils between the ages of twelve and nineteen who make 100 attendances while between those ages during the school year. The grant for pupils above sixteen on June 1st is to be double that of pupils below that age. Each school must employ one duly qualified teacher for each complete forty pupils on whom the grant is payable, with a proviso that a second qualified teacher will not be essential unless there are more than sixty pupils, a third unless there are more than 100, and so on; and also each qualified teacher must receive at least £20 above the minimum salary prescribed in the teachers' salaries grant. The Intermediate Board is given powers to vary the grant in special cases. The new grant will be greatly welcomed, and should help to improve intermediate schools and the salaries of the teachers, but it is not clear whether it is designed to, and will eventually, improve the position of lay assistant-teachers.

THE definite establishment of registration would help the lay assistant-teacher. The present rules defining a duly qualified teacher under the teachers'

salaries grant are only temporary and not very stringent; they do not, therefore, securely establish the position of the teachers, but a teacher who satisfies the proposed registration rules of the Registration Council will be able to assert his claim to a professional status, and will be greatly strengthened in his demand for improved conditions. It is to be hoped that the Government will soon sanction the proposed registration rules. The Registration Council is now in its third year of existence. In answer to a question in the House of Commons, Mr. Duke said they had been referred to the Intermediate Board, though why this should be done is not clear, as the board has five representatives to watch its interests on the Registration Council.

THE High Court of Justice in Ireland has drawn up a scheme of scholarships, called the Earl of Cork's scholarships, arising out of a reorganisation of the charitable trusts relating to the schools and almshouses founded at Lismore and Youghal by the will of Richard, first Earl of Cork (created 1620). The endowments are now vested in the Intermediate Board to provide two scholarships of equal amount every year, one for boys and one for girls, to be awarded on the results of the junior grade examinations. The scholarships are confined to candidates educated in the Lismore district. The capital sum of the endowment is £1,487 10s. The scholarships will be awarded for the first time this year.

THE Classical Association of Ireland held its annual meetings in Dublin on January 25th. The president for this year is Mr. J. Thompson, headmaster of the High School, Dublin, whose address, delivered in the lecture theatre of the Royal Dublin Society before a large audience, was on "Alexandria and its Literary Influence." The chair was taken by the retiring president, the Rev. T. V. Nolan, S.J., and the meeting was also addressed by the Rt. Hon. W. J. M. Starkie, chairman of the Intermediate Board, and by Prof. R. M. Henry, professor of Latin in Queen's University, Belfast.

THE Department has issued its time-table of technical school examinations for the present year. They will be held in different courses at various dates during the month of May. The latest date for receiving entries by the Department is March 16th. The general regulations governing the conduct of the examinations can be had on application.

THE Department has published the first number of its *Journal* for the present year. Apart from the official documents, which have already been noticed in these columns, there is little that bears directly on school work or education, but there are interesting articles on several matters of great importance in agriculture, such as (1) the production and distribution of power and its influence on Irish industry, (2) potato diseases, and (3) chemical manures in Germany.

THE Technical Education Committee of the Corporation of Dublin has published a statement on the industrial educational conference which it convened on "Training of Apprentices" and "Reform in Primary Education." Its leading recommendation

was in favour of the establishment of a scheme of apprentice scholarships in connection with a proposed preparatory trade school. The Department, however, has no funds available for the purpose of these scholarships, and a deputation which waited on the Chief Secretary with the object of obtaining funds could obtain no definite promise. The committee therefore, foresees no likelihood of being in a position to inaugurate the scheme in the near future.

#### WELSH.

THE report of the council of Aberystwyth University College presents an interesting picture of work carried on with a large measure of efficiency under the adverse conditions. In spite of the fact that there are in the present session 298 students in all, compared with 429 in 1913-14, and of the absence on active service of seventeen members of the teaching and administrative staffs, few of the activities of the college are in abeyance. Greek, honours mathematics, geology and law are the subjects that seem to have suffered most from lack of the usual number of students, from the calling up of those who had entered on courses. The Agricultural and Technical Department suffered severely from the loss of students, the Agricultural School not being opened for this reason. A class in the subject was, however, held at Brecon, for students who were forthcoming from that county, a large amount of advisory and demonstration work in agriculture, with special reference to the food-production campaign, was done in various counties of South and Central Wales. The summer school had the largest number of students since its commencement owing to the success of the library service course and the popularity of the geography course. Several members of the staff and research students have rendered valuable assistance in the prosecution of work of national importance.

THE appointment of a successor to Principal Griffiths at Cardiff has aroused much public interest, and considerable criticism has greeted the "short list" drawn up by the committee of selection, exception being taken both to the fact of the vacancy not being advertised and to the inclusion of names of holders of A degrees only, though a large proportion of the work of the college is scientific, and there is a call for the appointment of a person distinctly in harmony with Welsh national aspirations. At a meeting of the council on February 8th it was resolved, on the motion of Lord Pontypridd, that Principal Griffiths should be asked to remain in office for another year. This would be the second time that the tenure of the office by Principal Griffiths has been extended; he has, however, declined to retain the position, while not entirely severing his connection with the college. In addressing the Court of Governors for the last time as principal on February 14th, Dr. Griffiths insisted that while encouragement should be given to Welsh studies and to the fostering of Welsh national feelings, it would be the worst possible service to Welsh students to make the colleges wholly and entirely Welsh; moreover, the relations between the colleges should make for freedom of development rather than for uniformity, in accordance

each might render the best possible service to the surrounding community.

THE proprietors of the *Western Mail* have offered to committee of the National Eisteddfod at Neath sum of £100 as a prize for the best heroic poem English on "Wales and the War." The poem is to commemorate the part played by Welshmen since commencement of the war, and the adjudicator is Sir William Watson. This is the third prize of £100 offered for the Neath Eisteddfod.

TEACHERS continue to complain of the way in which Fisher grants are allocated. The Cardiff Headmasters' Association recently pointed out that the Education Committee's policy of assigning only two-thirds the grant to the improvement of salaries would cost the city £75,000 in lost grants during the next three years. Many secondary schools have given the whole grant, others not more than half. The rush to establish scales in advance of the reports of the Departmental Committees seems to have received a check.

### A FEW WORDS ON SEX INSTRUCTION.

*) How to Enlighten our Children.* By Mary Scharlieb. 202 pp. (Williams and Norgate.) 3s. 6d.

*) The Incidence of Venereal Diseases and its Relation to School Life and School Teaching.* By Sir Thomas Barlow. 15 pp. (National Council for Combating Venereal Diseases.) 2d.

*Straight Talks Series.* (i) *What Makes a Man; A King's Daughter; (iii) Friendship, Love, and Friendship; (iv) Marriage and Motherhood; (v) A man's Honour; (vi) Our Girls; (vii) Our Lads; (viii) Liberty and Popular Amusements.* By Spencer Elliott and Sylvia M. Hill. (S.P.C.K.) 1d. each.

READERS OF THE SCHOOL WORLD have had their attention fairly consistently directed to new books which have appeared during the past year or two on the subject of sex instruction. The subject is not pleasant, and no one enjoys writing about it. Yet the very doing so stares us in the face. Teachers and intelligent parents have alike reached the conclusion that innocence and ignorance are not the same thing, and that in order that the young may have more of former they must have less of the latter. The appearance of the books enumerated above forms a suitable occasion for taking stock of the present position, and for asking ourselves a few plain questions. We will state the questions and suggest the answers which, as we believe, commend themselves to the most thoughtful and experienced teachers. Our remarks apply to the instruction, not of young men and women, but of boys and girls at school.

*a) Should the instruction be collective or individual?* As a rule, to which there are very few exceptions, it should undoubtedly be individual. The vast majority of teachers would instinctively shrink from giving class instruction on so delicate a subject. One might call witness the whole world's literature, as well as the mass of common experience, that there is no other subject in which the descent from the sublime to the ridiculous may be so swift and disastrous. And even if we could invariably escape this danger, there remains the fact that in no case is it desirable that the subject should become one of ordinary and frequent conversation. If collective warnings are given, they should, Sir T. Barlow says, have a special object, and they should be rare.

*(b) Should the instruction be given by means of talks or by means of books—or both?* We think that teachers generally will agree with the opinion definitely expressed by Sir T. Barlow, and clearly implied all the way through Dr. Mary Scharlieb's really excellent book, that, so far as boys and girls are concerned, this is a case for the spoken and not for the written word. The fundamental objection to books and pamphlets on purity being distributed among boys and girls is that they may so easily be used to bring the subject into discredit. As Sir T. Barlow says: "With boys, even more than with men and women, it is imperative not to run the risk of illustrating the French proverb that it is ridicule which kills." Here, therefore, we find ourselves at issue with the "Straight Talks Series." Frankly, we hope that the first two numbers of the series, which are intended for boys and girls respectively, will not reach the hands of many boys and girls, though we hope they will reach the hands of many fathers and mothers, who may get suggestions from them for tackling a difficult problem. Sensitive children are apt to brood over these books, and the other sort are apt to make fun of them. As a rule, we believe literally in the straight talk.

*(c) What are the respective functions of parents, teachers, and doctors in this matter?* Circumstances vary so immensely that it is impossible to lay down any rule about the respective functions of parents and teachers, except that the teacher must, here as elsewhere, try to supply what the home lacks—which may be very much or very little. But the teacher should take care to go to the doctor for his facts. The writer of one of the "Straight Talks," for example, in speaking of the habit of self-abuse, states that many men are in our asylums to-day through the practice of this vice. Both Sir T. Barlow and Dr. Mary Scharlieb deny this. The former tells us that in some forms of insanity it occurs as a symptom, not as a cause; and the latter tells us that "it does not lead to insanity, though nearly all persons of unsound mind practise it." There can, of course, be no question as to whose word to take on this point. *Ne sutor ultra crepidam.*

*(d) Should the instruction be direct or incidental?* As adolescence advances, incidental opportunities of inculcating a right attitude towards the opposite sex will arise, and should be made use of in connection with (e.g.) the literature and the Bible lesson. And on the physiological (as distinguished from the moral) side, the study of botany introduces the question of modifications of structure in relation to sex. "There is," says Sir T. Barlow, "no moral potentiality in all this, but there is a scientific approach to a rational understanding of the fundamental problems of generation which is useful, so far as it goes, and free from dangerous suggestiveness." Still, the step to direct instruction must at some time be taken, though in a very cautious and limited way. For, to quote the eminent physician once more, "knowledge of sex physiology is not by itself much of a safeguard against sexual vice."

*(e) To what extent should the teacher's or parent's instruction be moral-religious, and to what extent scientific?* No experienced teacher is likely to misunderstand the statement that the former mode of treatment is very easily overdone. A certain number of boys will no doubt respond to the private religious appeal, but frontal attacks of that kind, always, of course, well meant, are apt to presuppose a stage of religious experience which has not, in fact, yet been attained. Such is the reflection suggested by many passages in "Straight Talks." Nor is it wise to talk sentimentally about the beauty and pathos of the relation between mother and child during the ante-natal period. The appreciation of beauty, whether in a poem, or in a

picture, or in the maternal relationship, is not cultivated by talking about beauty and gushing over it, but by putting these matters to the pupil in such a way that he can make up his own mind about their beauty. Again, we doubt the wisdom of one of the writers of "Straight Talks" in denouncing the habit of self-abuse as "filthy." Hard words do not generally make converts. A boy will be infinitely more impressed when it is explained to him, with a judicious admixture of science and morality, that he is robbing himself of that which gives to a man all his specifically manly qualities.

After what has been said, it is scarcely necessary to characterise further the books here under review. Dr. Mary Scharlieb's little treatise is manifestly written by one who combines learning with that rarer commodity, wisdom. The distinguished author knows human nature as well as the human body, and we should be glad if every parent in the land could read her book. Sir T. Barlow's pamphlet is, in its way, equally to be commended, and ought to be widely known. The "Straight Talks" offer some good suggestions to persons responsible for the upbringing of the young, but, as we have hinted, they need to be used with discrimination.

### SOME EDUCATIONAL ADVISERS.

*Cambridge Essays on Education.* Edited by A. C. Benson. With an Introduction by Viscount Bryce. 232 pp. (Cambridge University Press.) 7s. 6d. net.

In education, as in theology and in politics, periods of ferment and unrest have usually been marked by joint manifestoes on burning questions. One cannot take up these "Cambridge Essays on Education" without thinking, for example, of the "Essays on a Liberal Education," edited by F. W. Farrar fifty years ago, and the "Thirteen Essays on Education," edited by Dr. Lyttelton about thirty years ago. The three books are very similar in scope, and, indeed, the titles of the essays they contain sometimes match one another closely. The curious reader is thus offered the opportunity of making interesting comparisons between the thoughts of distinguished persons on the same subject at the intervals we have named. He will find the process facilitated by a fact which is perhaps not altogether to the good. The essays in the older volumes were, almost inevitably, written entirely from the public-school point of view, and most of the contributors to this new volume freely confess that they, too, can write only from that point of view. The two outstanding exceptions are Mr. Mansbridge, who takes the broad outlook upon the subject of "Citizenship," and Mr. F. Roscoe, whose subject, "Teaching as a Profession," is new to this generation, and who even now has to admit, alas! that the title of his essay is prophetic rather than descriptive.

The real occasion of the "Cambridge Essays" is indicated by Lord Bryce when he warns us against "rushing to new schemes which seem promising chiefly because they are new," and tells us that the special need of the hour is a re-statement and enforcement by argument of sound principles. To the same effect Dr. Benson writes:—"To deal with current and practical problems does not seem the first need at present. Just now, work is both common as well as fashionable; most people are doing their best; and, if anything, the danger is that organisation should outrun foresight and intelligence." The familiar adage, "Look before you leap," might, in fact, have been appropriately inscribed on the title-page. But there is no doubt in the minds of any of the writers about the stern necessity for the leap. The poor old nineteenth century, which men now in middle life look back upon with

such wistful disappointment, comes in for some hard knocks. "The last century," says Mr. Paton, "had all its brilliant achievement in scientific discovery and increase of production, was spiritually a failure. The sadness of that failure crushed the heart of Clausewitz, turned Carlyle from a thinker into a scold, and Matthew Arnold from a poet into a writer of prose." The tragedy of the century was that, "when it had acquired wealth, it had no clear idea, either individually or collectively, what to do with it." The keynote of most of the essays is struck in these sentences from the first of them. They are meant as an attempt, and the whole they are a genuine attempt, to ensure that the education of the twentieth century shall not be another spiritual failure.

We are warned by the editor that each writer has been given as free a hand as possible, and that effort has been made towards fusion of view. This warning was scarcely necessary, for in certain respects the company is indeed oddly assorted. The Dean of St. Paul's has taught boys in his time, but he is best known to fame as the historian and expounder of the mystical element in religion, and, still better, for the gift of crisp and incisive criticism which is exemplified in his contribution to this book, and has led some people to call him, inappropriately as we think, "the gloomy Dean." But in directing my attention to the "inner light" of mysticism, Dr. Inge has always straitly enjoined them not to ignore or belittle the light of reason. It is therefore in keeping with all his previous teaching that he now admonishes his countrymen to attend to "The Training of the Reason." He declares that Britannia has often been told to be good and to let who will be clever, and he quotes with approval Meredith's warning:

"She, impious to the Lord of Hosts,  
The valour of her offspring boasts,  
Mindless that now on land and main  
His heeded prayer is active brain."

But Dr. Inge is not of those who believe that science and logic are the only avenues to trustworthy knowledge. It is not many years ago since he spoke to a company of teachers about a "world which, though unseen, is not unknown, and of the existence of which we have a far greater certainty than we can have of the world which we perceive with our senses." We should, therefore, be curious to see what the Dean would make of the contemptuous reference of his fellow essayist, Prof. Bateson, to those "supernatural teachings which make preferably their defence by an appeal to intuition and other obscure phenomena which cannot be trusted to defy investigation." Prof. Bateson seems to make a clean sweep not only of Bergsonism with his intuitionism, but also of the Dean with his notions of superior certitude. We think it is going to make a great difference to the education of the twentieth century which of these two essayists is commonly held to be in the right. We should like to know whether Mr. Paton thinks that Prof. Bateson and his kind are on the road towards making the twentieth century a marked spiritual success.

A book of composite authorship is usually the despair of the reviewer, and, for purposes of comment, one must be allowed to pick and choose rather arbitrarily. Prof. Bateson's essay on "The Place of Science in Education" teems with other points of interest. He makes bold to say that laboratory work, at any rate in biology, is overdone; and he condemns the attractive but fallacious theory that students of science should find out everything for themselves. He believes in a general and undifferentiated scheme of science teaching, with a bias on the side of natural history, for pupils up to sixteen, and he gives a suggestive sketch

perhaps quite germane to his theme, of a secondary school curriculum which would satisfy him. On certain bigger questions we find him rather depressing. He seems to think that men of science can never command much influence in a democracy, which "inevitably worships and is swayed by the spoken word." But it may surely be suggested on the other side that men of science are by no means always dumb dogs, whilst scholars and philosophers often are; that the condition by which the typical product of Oxford proceeds, even now "with self-complacency unshaken," "take charge of Church and State" cannot be worn down in a day; and that, after all, a man's influence is determined not so much by his special studies at school and university as by his temperament and his native aptitudes. Again, in the closing passages of his book, Prof. Bateson, speaking as a biologist, ends with a shrug from the notion that all nations may yet achieve freedom to develop, "unhindered, unthreatened, unafraid." The one, he says, is the death of another. Well, it may be so. But it is comforting to reflect that the biologists are not all agreed. Prof. J. Arthur Thomson, for example, has reminded us that the struggle for existence need not be competitive at all; that it is frustrated not only by ruthless self-assertiveness, but also by all the endeavours of parent for offspring, of mate for mate, of kin for kin; and that the world—in the world of "Nature"—is not only the abode of the strong, but also the home of the loving. Even if biology were unable to certify as much, we should be left with the question whether the law of the jungle is to remain the law of nations. On the whole, we prefer the wisdom of the non-scientific Dean of St. Paul's. "The laws of psychical and spiritual life," he writes, "are not the same as the laws of chemistry and biology, and the besetting sin of the scientist is to try to explain everything in terms of its origin instead of in terms of its full development; 'by their fruits,' he says, 'not by their fruits, ye shall know them.'" We suggest that Prof. Bateson might here take a leaf out of Dr. Inge's part of the book.

We have left ourselves little space for remarking on the remaining essays. We are glad to see that more than one writer lays stress upon the value of hobbies, in other words, upon training for the use of leisure. This is a vital matter for all classes of society. Mr. Nowell Smith advises the teacher to try to secure that everyone grows up with at least two hobbies, of which, whatever one may be, the other should be literature. Mr. W. W. Vaughan writes on "Religion at School," the reference being entirely to the public school and the Established Church. He tells us that teachers have overcome their timidity in dealing with the difficulties of the Old Testament. We hope that this statement is as true as he thinks it is, but we have grave doubts. He tells us that more diffidence is felt, and rightly so, in approaching the New Testament, but that diffidence ought not to involve silence. "We confess we should like Mr. Vaughan to have developed this theme in practical lines, even if much else that he says must in that case have been left unsaid. The modern psychologist will sometimes smile at Dr. Benson's amateur psychology, and the modern pedagogue will smile at Dr. Inge's assertion that "it does not matter very much what is taught; the important question is to ask what is learnt." But at the worst these are mere blemishes. The Cambridge essays were extremely well worth producing. Even to a needy schoolmaster, the brilliant contributions by Mr. Paton, Dr. Inge, Mr. Nowell Smith, and Sir John McClure are alone, if the anti-climax may be forgiven, well worth the shillings that the book costs.

T. RAYMONT.

## RECENT SCHOOL BOOKS AND APPARATUS.

### *Modern Languages.*

*An Intermediate Spanish Reader.* By E. S. Harrison. (Ginn.) 3s.—We have very few Spanish readers suitable for the second year of instruction, and therefore Mr. Harrison's little volume should be welcome. The earlier pieces may even be attempted in the second half of the first year. They are mainly anecdotes, and fortunately not hackneyed ones. Gradually the stories increase in length. They are fairy-tales, including versions of some of the exploits of Baron Munchausen and the Japanese tale of the fisherman Urashima. Other tales, grave and gay, are drawn from modern life. As is now customary in American editions of foreign texts, there are questions based on the stories and English sentences for translation. The notes deal fully with all difficulties of subject-matter or grammar, and the vocabulary is good. There are a few illustrations, but they are not of much use, especially as they do not always agree with what appears in the text.

*Elementary Spanish-American Reader.* By F. B. Luquien. xi+224 pp. (New York: The Macmillan Company.) 4s. net.—The commercial importance of Spanish is more fully recognised than ever before. The study of the language has, however, not been so common in this country as might be desired, and our publishers have not bestirred themselves in the matter. Far more attention (as is but natural) has been devoted to Spanish in the United States. Among a number of helpful readers published in that country this, compiled by Prof. Luquien, deserves much praise. It contains eighteen prose extracts relating mainly to the history and geography of South America, as well as a Mexican fairy-tale, a version of Longfellow's "Village Blacksmith," and the Argentine National Anthem. There are questions in Spanish on each extract and English passages for retranslation. There are good notes (in Spanish) on the subject-matter, full grammatical notes (in English), and an excellent vocabulary. The printing is very good, the text is free from misprints, and there are useful and well-selected illustrations. The reader of this book not only extends his Spanish vocabulary and knowledge of grammar, but also receives a stimulating introduction to the past and present life of the great nations of South America.

*First Steps in Russian.* By J. Solomonoff. viii+131 pp. (Kegan Paul.) 2s. 6d. net.—In the text of the book it is called a "First Russian Reader," and this is really a better description of it than the title on the cover. It consists of pictures, drawn from school books such as are used for the teaching of Russian in the Baltic provinces, with a descriptive text, questions in Russian, and explanatory notes, dealing with matters of grammar in a very systematic way. There is also a vocabulary. A good teacher may be able to make satisfactory use of this book, but he will be at the trouble of supplying the grammatical exercises. The private student may use it for extending his vocabulary. Perhaps the best feature is the pictures, which, though often crude and badly reproduced, provide genuine representations of the Russian peasantry, of utensils, scenery, etc.

*French à la Française.* By Lady Bell and Mrs. C. Trevelyan. (Arnold.) Book I., 64 pp. 10d. Book II., 95 pp. 1s. Book III., 96 pp. 1s.—Who does not know "French without Tears"? The title was an inspiration, and the little books have found

many readers since they were issued twenty years ago. Whether these successors will be equally popular we should hesitate to foretell. The title is no improvement; it has no clear meaning. The text contains simple stories of an amusing kind. The new words occurring in each lesson are given at the head of it, with English renderings, and there is a vocabulary to each book. Very up-to-date pictures in the "Fish" manner are supplied by a nameless artist who has some quaintness of fancy but has not taken much trouble to give the people an appearance "à la française"; nothing could be more painfully English than Grand'mère on p. 29 of Book I., or the maid Euphrasie on p. 44. One does not like to appear ungracious, but these booklets seem specially suitable for the select little boys and girls who learn French in the nursery. They are not adapted, and probably not meant, for use in secondary schools.

### Classics.

*Oxford Junior Latin Series.* *Virgil, Aeneid IV.* Edited by C. E. Freeman. 108 pp. *Selections from Ovid.* Edited by C. E. Freeman. 128 pp. *Livy I.* Edited by C. E. Freeman. 198 pp. (Clarendon Press.) Each 1s. 6d.—We extend a hearty welcome to this new series, which is assured of success if the future authors to be included in it find editors with the lucid powers of exposition and understanding of boys' needs which are possessed by Mr. Freeman. The introductions are admirably adapted for young readers, and Mr. Freeman is to be heartily congratulated upon what he has achieved, both in these and in the notes, and it is all done simply by taking to heart the old injunction of Marcus Aurelius, *ἀπλωτος οεαυτόν!* There is a vocabulary to each volume; the text of the Livy and Virgil (Oxford text) is, of course, complete, and the Ovid selections—elegiac, *plus* about 200 lines of the "Metamorphoses"—are as excellent as any selection, from an author so unsuited to young schoolboys as Ovid undoubtedly is, could well be. Our only criticism is that long quantities, at any rate in the prose author, should have been marked.

*The Epistle to the Hebrews.* Edited by A. Nairne. clxv + 141 pp. (Cambridge University Press.) 4s. 6d. net.—This latest addition to the well-known "Cambridge Greek Testament for Schools and Colleges" contains the Greek text of the Epistle (twenty-four pages long), more than 100 pages of notes, an excellent index, and a very exhaustive introduction extending to some 150 pages. Such an introduction passes, of course, far beyond the needs of schools; but, for the theological student, the history of the criticism and interpretation of the Epistle and the scholarly appraisement of its theology which Dr. Nairne propounds are invaluable. All such will be deeply grateful for such an excellent modern edition of a remarkable Epistle.

### English.

*Typical Forms of English Literature.* By A. H. Upham. 281 pp. (Oxford University Press.) 6s.—All books of this stamp require a second volume of extracts to explain and illustrate their statements. The book takes the form of chapters on formation of types, the ballad, the lyric, the epic; the personal essay, the novel, the short story, and the drama. This division in its detail and in its omissions is academic; and thus, though it intends to attract us to a wise outlook on literature, it leaves quite untouched the greatest book we possess, and untouched but for half a line the greatest romance. Let us have our grumble over this and say plainly that as no English history has yet been written, so no account of literature in this coun-

try has ever seen the light. Perhaps it is reserved for a democratic public to demand a democratic book. Prof. Upham is woefully short in dealing with the formation of types—an extremely interesting subject—and though a note sends us to Brunetière, we should have preferred a short abstract of "L'Evolution des genres." What made Francis Thompson a lyrant and North a translator and Pindar an odist?

The volume brings us down to to-day, and each chapter is accompanied by a list of books of reference very valuable, though many of these, being from American pens, are difficult to obtain. There is also the more the necessity for illustrative matter and for points of view offered by little-known writers. A book lately noticed in these columns ("The Rise of Literary Prose") would gain greatly by an additional volume, and we notice that the "Cambridge History of English Literature" has promised added matter to illustrate its statements and criticisms, just as a teacher who is going to do anything with a class sees that he is within the reach of library shelves. But we hasten to add that the book is the most complete of its type and supplies a link between America and Oxford which have joined in its production.

*The English Journal.* November issue. (Chicago University Press.)—The first article in this issue is by Mr. Pendleton on "The New Teacher of English." The whole view of English as a subject is raised in his restrained but really eloquent pleading for a new kind of English and a new kind of teacher. It seemed to the reviewer, while reading it, that he had by some magic been wafted back as by a Henry James into the atmosphere of Renaissance enthusiasm, when scholars and teacher co-operated for an aim seen by both. It should "pay" any enterprising English publisher to reprint this article and send it for twopence to many not all, of our teachers of English. Not to all, for we have here some who have long ago been working on Mr. Pendleton's suggested lines. The rest of the number discusses the teaching of grammar and the history of literature; it contains also an interesting paper on an adult school such as we do not find room for in England.

*Books for the Bairns: Shakespeare.* 47 pp. *Freshwater Fishes.* 47 pp. *Our Bird Friends and How They Live.* 47 pp. (Stead.) 2d. each.—Except for the increased price, the books of this admirable series are as of old. But the "Life of Shakespeare," by J. Booth, demands more than a passing word. Of course, the greater lives are used in its compilation, but the result is a marvel of correctness, suitability and simplicity. There is perhaps too much reliance placed on tradition; but in this the larger books are not without blame. A little more might have been said about the First Folio—still procurable in a reduced facsimile for 7s. 6d.; and as the Bairns' Books are for young children we might have heard more about Shakespeare's schoolboy. But we have a trustworthy and illustrated life for 2d. The books on fishes and birds are thoroughly interesting, and will bear reading aloud in class. There is now a French edition of this series, also for 2d., so that a clever young person may improve his own French for ad. It is easy to teach a child the mysteries of retranslation.

*Four War Plays for School Children.* By the Rev. H. J. Bulkeley. 126 pp. (Routledge.) 1s. 3d.—Anyone who will take the trouble to coach a set of children in one of these should find plenty of fun. No fee is charged, and half the profits on the sale of the book

to the Red Cross Association. We congratulate the author on a bright and cheerfully useful bit of war work. The book is admirably printed.

**Hazlitt: Selected Essays.** Edited by George Sampson. 251 pp. (Cambridge University Press.) 3s. 6d. —Many there are (*de gustibus . . .*) who say they prefer Hazlitt to Lamb. But undoubtedly Hazlitt is coming once more into his own. Here, with very full notes, but not too full, we have "The Fight," "The Indian Jugglers," "On Reading Old Books," "Persons One Would Wish to Have Seen," three art essays, and others. There is a full introduction, which rings before us the man who maundered over his woe, quarrelled with the world, and "had a happy life." On any canvas of the time Hazlitt stands out, ambovant. But all his prose is solid stuff, with gems flicking through. This edition is excellent in size and shape.

#### History.

**Illustrations of Chaucer's England.** Edited by Dorothy Hughes. xiv.+302 pp. (Longmans.) 7s. 6d. net.—This volume is the first of a series of "University and London Intermediate Source Books of History," planned by the Board of Studies in History. The purpose of the series, as explained by Prof. Pollard in a short preface, is to provide a general selection of original documents, covering, when complete, the whole course of English history, suitable for students preparing for the Intermediate Arts Examination of London University. The volume now before us is set by the university as the special subject for 1919. It is hoped, however, that the series, by reason of its attractiveness and usefulness, will appeal to a much larger and more general public as well. The documents in the present volume, all of which, if not originally in English, are translated, relate to four main topics, viz. the Hundred Years' War, social life, ecclesiastical affairs, and the political and constitutional developments of the fourteenth century. The selection is carefully and judiciously made. The explanatory introductions to the documents, however, are frequently far from adequate. Notes, also, are almost wholly absent, and they are often urgently needed. A preliminary general survey of the period, too, would be useful.

**Germany, 1815-90.** By Sir A. W. Ward. Vol. ii., 1852-71. xvi.+588 pp. (Cambridge University Press.) 2s. net.—Sir A. W. Ward's notable history of Germany in the nineteenth century expands as it proceeds. His second volume, larger though it is than most of the series to which it belongs, covers only twenty years, and brings the story no farther than the date of the founding of the Empire. Students, however, have reason for gratitude rather than complaint. For Germany is a theme of absorbing historical interest at the present time, and no greater master of the intricacies of its annals exists than the author of the work before us. The topics treated in this volume are, first, the chaos and the conflicts of the period 1852-63; secondly, the Schleswig-Holstein question and the Danish war; thirdly, the Austro-Prussian conflict; fourthly, the North German Confederation; and finally, the Franco-Prussian struggle and its sequel. Particularly noteworthy is Sir A. W. Ward's exposition of the complex Schleswig-Holstein problem; it is an original contribution of high importance, based largely on first-hand evidence not before available. Mr. Spenser Wilkinson has furnished some valuable sections on the military campaigns of the period, elucidated by numerous plans.

**Everyman's Library: New Historical and Biographical Volumes.** (1) Maine's *Ancient Law*. One vol. (2) Duruy's *History of France*. Two vols. (3) *Memoirs of Cardinal de Retz*. Two vols. (Dent.) Cloth, 1s. 6d. each; leather, 3s. each.—The new volumes of "Everyman" just issued (at the enhanced price necessitated by war conditions) are of great interest. They are all classics of established worth and of old popularity. (1) Maine's "Ancient Law," first published in 1861, is not only a book of prime importance to all students of early institutions; it is also a fine monument of English literary style and a work of absorbing interest. (2) Duruy's "History of France" sketches with remarkable lucidity and accuracy the course of French history from the earliest times to 1815. Duruy himself appended a summary of the events of the period 1815 to 1871, in which latter year the work was originally published. The present English edition, well translated by Mr. Jane and Miss Menzies, adds an epitome of the subsequent era, 1871-1914. Students who use this convenient edition will have to bear in mind that some of Duruy's views have been modified by researches made since 1871; but the general reader need not hesitate to peruse this masterly survey with confidence in its broad fidelity to truth. (3) The "Memoirs of the Cardinal de Retz" form an authority of first-rate significance for the social and political life of France in the mid-seventeenth century. The Cardinal, a worldly and unprincipled courtier and one of Mazarin's leading opponents, was born in 1613 and died in 1679. His memoirs were written for the most part between 1655 and 1665, but they were not published until some forty years after his death. They then created a considerable sensation, because of their scandalous revelations and their revolutionary sentiments. They are still indispensable authorities for students of the period of the Fronde.

#### Geography.

**Introductory Geography.** By H. Clive Barnard. 154+ii pp. (Black.) 1s. 8d.—This book is designed for children aged from ten to twelve. It aims at laying the foundations for the geographical superstructure and deals with the earth, maps, the work of wind, rain, rivers, and ice. It makes a concession to the older views of what constitutes geography by a chapter on earthquakes, volcanoes, and geysers, but is modern in the devotion of a fifth of the book to "The Natural Regions of the Globe." The book concludes with an outline of the geography of the British Isles. There are many exercises intended as an integral part of the course, and meant to be taken orally.

**Cambridge Industrial and Commercial Series. Agriculture and the Land.** By G. F. Bosworth. 93 pp. (Cambridge University Press.) 1s. 6d.—Within its few pages this book touches cursorily on many topics, which have one connection—the land. The following sample topics will give some notion of the range of the book:—The history of British agriculture, garden cities, canals, coast erosion, co-operative societies, the functions of the Board of Agriculture.

#### Mathematics.

**Elliptic Integrals.** By H. Hancock. (Mathematical Monographs, No. 18.) 104 pp. (Chapman and Hall.) 6s. net.—This is a well-arranged and compact monograph on the Legendre-Jacobi theory. Limitations of space have compelled the author to confine the discussion almost entirely to elliptic integrals of the first and second kinds, but the book provides a firm foundation upon which a more extended knowledge of the

subject may be erected. It is a pity, however, that no room has been found for a brief account of the Weierstrassian forms, for the student will meet them in his reading as frequently as the others. The first chapter deals with the reduction of elliptic integrals to Legendre's normal forms. The second explains the inversion of the integrals and discusses the properties of the *sn*, *cn*, and *dn* functions. In both these chapters graphs are given which materially assist the reader to understand the peculiarities of the functions. The third chapter is on the reduction of elliptic integrals to Legendre's form, while the fourth shows how the numerical values of the integrals are computed. A final chapter gives a number of miscellaneous examples involving elliptic integrals, and the book concludes with three five-place tables taken from Levy's "Théorie des fonctions elliptiques."

#### Science and Technology.

*Britain's Heritage of Science.* By Arthur Schuster and Arthur E. Shipley. xv+334 pp. (Constable.) 8s. 6d. net.—The main purpose of these distinguished authors is to give a plain account of the part which Great Britain has played in the progress of science, especially the progress of the last three centuries. Prof. Schuster is responsible for the treatment of the physical (including the chemical and engineering), and Dr. Shipley for that of the biological sciences. After following their straightforward records, one cannot but conclude that the heritage here outlined must fill every British worker in science with pride, and enable him with confidence to court a comparison with the accomplishment of any other country's men of science during the same period.

The language of the volume, with its free use of technical terms, will scarcely be understood, we fear, by the general reader, and only the more advanced science classes of schools will have knowledge enough to appreciate the book. College students taking up science will find the history invaluable as taking them from a consideration of the details of their own particular subject to an authoritative view of the growth of experimental and observational science as a whole. The book should certainly be in every school library, and be constantly referred to in connection with the subject of science included in the curriculum. But it is not quite the book teachers of science are looking for, as giving boys on the classical and mathematical sides broad general views of the outstanding principles of science, and at the same time emphasising the heroism and devotion to their work of many of the men whose researches are here epitomised.

The attractiveness and usefulness of the book would have been enhanced if, by one of the many expedients possible with modern type, the authors had made it clear where each biography begins and when a new subject is introduced.

(1) *Introduction to Inorganic Chemistry.* Third edition. xiv+925 pp. 8s. 6d. net. (2) *Experimental Inorganic Chemistry.* Sixth edition. vii+171 pp. 3s. 6d. net. (3) *A Laboratory Outline of College Chemistry.* v+206 pp. 3s. net. All by Prof. Alexander Smith. (Bell.)—Prof. Smith's books on chemistry are well known and highly esteemed in the schools and colleges of this country. Of the "Introduction" it is only necessary to say that in the third edition the general arrangement of the book has not been altered, excepting that the difficult chapter on the oxygen acids of chlorine has been transferred to a later position in the book, the contents have been brought up to date, and more applications of chemistry have been introduced.

The "Experimental Inorganic Chemistry" is in-

tended for college students beginning chemistry. The sixth seems to be a reprint of the fifth edition, and some idea of its popularity may be gathered from the fact that German, Russian, Italian, and four other foreign editions have been published.

The "Laboratory Outline of College Chemistry" is for use with the "Introduction," and provides an admirable course of experimental work for students taking up the serious study of the subject.

#### Miscellaneous.

*The Historical Register of the University of Cambridge to the Year 1910.* Edited by J. R. Tanner. xii+1186 pp. (Cambridge University Press.) 12s. od. net.—This is described as a "supplement" to the well-known "Calendar," but it is no mere appendix. In recent years the "Calendar" has reached such proportions that the Syndics of the Cambridge University Press decided to issue a special volume, as a historical register, which should contain part of the information previously incorporated in the "Calendar," treated in greater detail, together with all other information about the University which historical research could add. The present volume is the result, and it is no unworthy monument to painstaking and accurate research. In it the Tripos lists are extended back to the year 1408, and there is much new information upon the history of the University Courts. Altogether, the volume is invaluable to the bibliographer, and the general reader—whether a Cambridge man himself or not—will be interested to turn over the records of the names of men now famous in history—especially those of the Elizabethan age—to which Dr. Tanner's lucid and curt footnotes form an excellent commentary.

#### EDUCATIONAL BOOKS PUBLISHED DURING JANUARY, 1918.

(Compiled from information provided by the publishers.)

##### Modern Languages.

Labiche: "La Grammaire." Edited by H. L. Hutton. (Oxford French Plain Texts.) 48 pp. (Clarendon Press.) 6d. net.

"L'Avare: Comédie par Molière." Edited by Prof. A. T. Baker. lxxxvi+120 pp. (Longmans.) 3s. net.

"Russian and English Commercial Correspondence" (In Russian and roman characters.) By S. G. Stafford and W. Chevob Maurice. 128 pp. (Marlborough.) Fawn wrapper, 2s. net; cloth, 2s. 6d. net.

"Foundation Book of French Verbs, Accidence and Syntax." By F. A. Hedgecock. 91 pp. (Pitman.) 1s. net.

"Spanish Conversation." Book I. By E. A. Baton. 102 pp. (Rivington.) 2s. 6d.

##### History.

"Social Life in Britain from the Conquest to the Restoration: A Series of Extracts from Contemporary Writers." Edited by G. G. Coulton. xvi+540 pp. (Cambridge University Press.) 15s. net.

"Illustrations of Chaucer's England." Edited by Miss Dorothy Hughes. With a preface by Prof. A. F. Pollard. xiv+302 pp. (Longmans.) 7s. 6d. net.

"An Introduction to Early Church History." By R. Martin Pope. viii+164 pp. (Macmillan.) 4s. net.

"Short History of Australia." By E. Scott. Second edition. 383 pp. (Oxford University Press.) 3s. od.

##### Geography.

"Introductory Geography." By H. Clive Barnard. 154+iv pp. (Black.) 1s. 8d.

"The Preliminary Geography." Edited by A. J. Robertson, revised by O. J. R. Howarth. Sixth ion. 100 pp. (Clarendon Press.) 1s. 6d.  
"Elementary Geography." Vol. v. Edited by A. J. Robertson, revised by O. J. R. Howarth. Second ion. 158 pp. (Clarendon Press.) 1s. 6d.

### Mathematics.

"Infinitesimal Calculus." By Prof. F. S. Carey. ion II. (Longmans.) 10s. 6d. net.

### Science and Technology.

"Lecture Notes on Light." By J. R. Eccles. 218 pp. (Cambridge University Press.) With p. of diagrams, 12s. 6d. net; with blank pages for rams, 5s. net.

"Industry and Finance: War Expedients and Reconstruction." Edited by A. W. Kirkaldy. 380 pp. man.) 4s. 6d. net

"Glass and Glass Manufacture." By Percival Mar- 130 pp. (Pitman.) 2s. net.

### Pedagogy.

"The Dawn of Mind: An Introduction to Child hology." By Margaret Drummond. 188 pp. d.d.) 3s. 6d. net.

"The School and Other Educators." By John ke. (Longmans.) 5s. net.

"The Rural Teacher and his Work in Community ership, in School Administration, and in Mastery w. School Subjects." By H. W. Foght. (Mac- m.) 7s. 6d. net.

### Miscellaneous.

"Mother Stories." By Maud Lindsay. 192 pp. tap.) 4s. 6d. net.

## CORRESPONDENCE.

*Editors do not hold themselves responsible for e opinions expressed in letters which appear in ese columns. As a rule, a letter criticising any title or review printed in THE SCHOOL WORLD ll be submitted to the contributor before publica- n, so that the criticism and reply may appear gether.*

### The Fisher Grant.

there seems to be general dissatisfaction with allocation of the Fisher grant, and as it might well if all the members of the profession could e in one common demand for an equitable disti- tion, I beg you to be good enough to make the appended letter, signed by the nineteen bers of our staff, and recently forwarded to the urning body.

e belong to a secondary endowed girls' school, a boys' school on the same foundation, and the orors have adopted the scheme of the London County Council, a fact of which we became aware last month.

### AN ASSISTANT-MISTRESS.

We have just become aware of the particulars of scheme according to which the Fisher grant has allocated by the . . . governors. We were ed in advance by our honoured and trusted head-ress that we were certain to receive as favourable ment as our men colleagues in regard to this grant; but we find now that this is far from g the case. Yet the fact that we are women not protected us from a great and sudden rise ur income tax; our rents and rates are the same or men; prices of food and clothing have in-

creased for us as much as for men. All the hard-ships of war, in short, fall just as heavily on women as on non-combatant men. On the other hand, our professional qualifications have to be at least as high as those of our male colleagues; and our devotion to, and skill in, our common work have never been questioned. Finally, the Fisher grant is earned equally by girls and boys.

"We deplore and resent the ungenerous, if not unjust, treatment meted out to us by our governing body, and we trust that this unfair scheme may be immediately so revised that we may feel less bitterly than we now do that our sex is a disqualification in a profession which would appear to be one eminently suited for women."

### Advanced Courses: An Examination Paper.

It has recently been part of my burden to construct instruments of torture for the youthful mind, and as I proceeded I was filled with the desire to invent others adapted to the needs of some of our statesmen. So here is one for the President of the Board of Education. It is confined to one special aspect of his vast subject, but the time allowed for answering the paper is unlimited.

### ADVANCED COURSES.

*Question I.—X is a town of some 350,000 inhabitants, with public secondary schools as follows:—*

A.—A boys' public school—day fees, £25-£30 a year—not in receipt of Government grants. Could organise all three courses, and already has their equivalent.

B.—A girls' high school—fees £25-£30 a year—no Government grants; numbers 200. Prepares girls of the quite well-to-do classes for home rather than professional life; sends a selection to Oxford or Cambridge.

C.—Boys' grammar school—£9-£12 a year—numbers 300. Has boys preparing for the university in all three groups, but not enough to establish all three "advanced courses."

D.—Girls' high school—fees £14-£16 a year—numbers 200. Accepts Government grants. Could manage a "modern studies" course, but not enough students to run two "advanced courses" in the sense of the Board.

E.—A boys' technical school, with an advanced engineering top.

F.—A girls' endowed school—fees £7 a year—takes Government grants; numbers 450. Post-matriculation students, about ten.

G. and H.—Mixed secondary schools, three miles away.

(a) What is C to do with its classical boys? They can't afford A, and would not be welcome if they could.

(b) D now sends girls to the university in all branches, but only one or two in each branch. How is D to get enough in one group to satisfy the Board?

(c) What is F to do with its clever girls?

(d) If D organised a modern studies course and F a science one, is it likely that girls will leave D to go to F?

*Question II.—Y is a composite semi-urban district with two girls' schools, A a G.P.D.S.T. high school and B a county high school.*

(a) Mary Jones, having distinct ability for languages, is asked to go from B to A at the age of sixteen. Will she go? What sort of time will she have if she does?

(b) Ellen Smith wants to work for a science scholarship, and is requested to leave A for B. Will she do it? If she refuses, what provision is A to make for her needs?

*Question III.—Z is a small country town of 10,000/*

inhabitants, with one secondary school of 300 pupils. No other exists within fifteen miles.

(a) Is no one in Z ever to study classics?

(b) Whose interests are to predominate in deciding between the requirements of boys and girls in the selection of a "course"? What happens to the group not provided for?

**Question IV.**—A headmaster, on examining his "senior school" examination list, finds he will have six post-matriculants. Of these, three have a bent for science or mathematics, one is fairly safe for a university scholarship in English, one wants to do modern languages, and the sixth would prefer history, but might do French.

(a) Will the Board accept three as the nucleus for an advanced course in science?

(b) If not, what ought the headmaster to do? Persuade the others to take up science, or forgo the attempt to form a group?

(c) What will he do?

**Question V.**—There are two schools within reasonable reach of each other. One has a special reputation for a certain tone and character, and is run on rather unorthodox lines. The other is more traditional and ordinary. Write a letter to the head of either of the schools expressing, in moderate terms, the opinion and feelings of a British parent asked to transfer his son to the other school.

**Question VI.**—Mary Smith is a clever girl, who has distinct ability in languages, but is apt to say  $2+2=5$  when faced with a mathematics or science paper. She is rather shy and retiring, but has much character, which only needs responsibility to bring it out. The school has an "advanced course" in science, but language specialists are expected to transfer to another. If Mary stays where she is she will have two years of responsibility and at least one of leadership as head of the school. If she moves she will miss this training, and in new surroundings, among strangers, will have her shyness increased and her faculties will lack full play.

Which is the headmistress to advise her to risk? Her university scholarship by staying, or her two years' character training by transferring?

**Question VII.**—Would Mr. Fisher ask a Wykehamist to move for his last two years to Shrewsbury or Charterhouse? If not, why not? C. M. W.

#### The Metric System in America.

MAY I beg the hospitality of your columns for the following extract from the *New York Tribune*, dated January 22nd, 1918:

WAR DEPARTMENT ADOPTS METRIC SYSTEM FOR GUNS.

"Adoption of the metric system of measurements for artillery and machine-guns and maps for the American overseas forces was announced to-day by the War Department.

"The change was agreed upon at the suggestion of the French Government to avoid confusion in France, where the metric system is used exclusively."

After the war it is unlikely that American engineers, who will have grown accustomed to working on the international system (which renders all parts of machinery interchangeable), will readily return to the English system. E. MERRY,

Acting Secretary of the Decimal Association,  
Finsbury Court, Finsbury Pavement,  
London, E.C.2.

#### Miss Waring's "Serbia."

YOUR reviewer of my book "Serbia" says that my zeal causes me "to under-estimate the difficulties which

the neighbouring peoples have had in living peacefully with the Southern Slavs." He evidently refers to the relations between Southern Slavs and Austria. May I point out to him that the famous Press Bureau of Austria for years previous to the war tried to give other nations just such an idea of the Southern Slavs as your reviewer cherishes, and they carried on their campaign to some extent by the use of forged documents, which, as someone has pointed out, would have brought a private individual to penal servitude? Your reviewer is behind the times in clinging to misrepresentations made for the purpose of preventing the Central Powers from standing up for Serbia if she were attacked by the Central Powers. May I suggest that he should read the books of Mr. H. Wickham Steed and Seton-Watson, in which the bearing of the anti-Serbian propaganda is exposed?

I do not, of course, wish to deny that the Southern Slavs have been a danger to Austria. About two-thirds of them were misruled by Austria, and wished for union with Serbia. But we, who were stirred with enthusiasm by Garibaldi and the Young Italy movement, ought to be equally stirred by a movement of the same kind among Southern Slavs.

In the interests of justice, may I ask for the impartiality of your columns for this letter?

L. F. WARING.

Centre Cliff Lodge, Southwold, Suffolk,  
February 11th.

It is difficult to see the point of Miss Waring's objection. She protests against my reference to "the difficulties which the neighbouring peoples have had in living peacefully with the Southern Slavs," but naively admits that "the Southern Slavs have been a danger to Austria." That is precisely the fact, set over in her book, which I wished to emphasise. I doubt it is true that Austria exaggerated this danger, forged false evidence of its magnitude; but, as I am pleased to see Miss Waring now allows, that does not mean that it was non-existent. Miss Waring is quite enough to refer me to two books on the Southern Slavs, question written by authors who share her prejudices "enthusiasm" in the matter. May I in turn refer to chap. xiii. of Capt. Temperley's "History of Serbia," from which she may possibly be able to learn with impartiality in this particular department of history.

YOUR REVIEWER.

## The School World.

-A Monthly Magazine of Educational Work and Progress.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 232.

APRIL, 1918.

SIXPENCE.

## THE ARITHMETIC OF CITIZENSHIP.<sup>1</sup>

### II.

By T. PERCY NUNN, M.A., D.Sc.  
Professor of Education in the University of London.

#### THE THEORY OF LOANS.

As soon as the pupil understands how to calculate the amount and present value a sum at compound interest, she can follow the theory of the repayment of loans—a subject of immense importance, upon which every intelligent citizen should be informed. The simplest case is that of the loan—the present or loans are an apt instance—which is returned in a lump sum, with or without a premium or bonus, a uniform rent or dividend being paid to the lender throughout the period of currency. The only thing that needs explanation here is the method of "drawing the numbers" of the bonds that are to be repaid at a given date. The daily newspapers frequently contain among their advertisements a list of numbers so drawn in connection with some home or foreign loan. The teacher should also deal with the method by which the loan is subscribed, explaining with the help of a prospectus of a public loan what is meant by the payments due "on application," "on allotment," etc.

The more complicated cases are those in which the capital borrowed is repaid to each lender by instalments. Such loans may be divided into two types: (i) those in which the annual sum paid by the borrower varies, and (ii) those in which it is constant. The following is a simple instance of the first type. In order to buy his house a man borrows £500 from a building society. He undertakes to make an annual payment to the society of not less than £50, which sum is to include interest at 5 per cent. on the borrowed capital still outstanding immediately before each annual payment. Let us suppose that he begins by paying £100 at the end of the first year; then this sum must be regarded as made

up of £25 interest on the £500 together with £75 repaid capital. Thus he begins the second year with £425 borrowed capital outstanding. If, at the end of that year, he is able to pay £120, then this includes £21·25, the interest on £425, together with a further repayment of £98·75 capital. He begins the third year, therefore, owing £326·25. In this way we can trace the discharge of the loan to its happy conclusion.

The second type of loan is of more importance. It may be illustrated by a modification of the previous example. Suppose our building society to require the discharge of the loan by equal annual payments of such amount that the business is closed up in exactly seven years; what must the amount of the annual payment be?

It is usually assumed that problems of this kind can be solved only by means of the formula for summing geometrical progressions; that, however, is not the case, as the following argument will show. Imagine that you take £100 to some financial institution and leave the sum there for seven years, receiving annually £5 as interest on the deposit. At the end of the term you will be in this position: you will have received an income of £5 for seven years and you will still be able to withdraw your £100 intact. It appears, then, that at the moment when you handed over the £100 you were purchasing two distinct things: (i) the right to receive £100 in seven years' time, and (ii) the right to receive £5 annually for seven years. Now the value of the first right, at the moment when you struck the bargain, is easily calculated; for it is the present value of £100 due in seven years at 5 per cent. compound interest per annum. It is,<sup>2</sup> in fact,  $\frac{1}{1.05} + \frac{1}{1.05^2} + \dots + \frac{1}{1.05^7} = \frac{100}{1.4071}$ . It follows that the second of the two values is  $100 - \frac{100}{1.4071} =$

<sup>1</sup> There is no need to inflict on a class the tedious labour of evaluating  $(1.05)^7$ . As soon as it has thoroughly grasped the method of computing amounts at compound interest, the results for long terms should be taken from Compound Interest Tables such as those given in "Whitaker's Almanack."

$\text{£}40\cdot71/(1\cdot4071)$ . In other words, if you had paid the financiers the sum of  $\text{£}40\cdot71/(1\cdot4071)$  instead of £100, they could have afforded to make you the annual payment of £5 for seven years, but you would not have been entitled to receive any further sum at the end of that period. Moreover, they would have received each year 5 per cent. interest on whatever amount of your deposit still remained in their charge. With this result before us, we can proceed to solve the problem of the building society. The question to put is: If seven annual payments of £5 will discharge a loan of  $\text{£}40\cdot71/(1\cdot4071)$  and give the lender 5 per cent. interest on the capital outstanding immediately before the end of each year, what must the annual payment be when the loan is £500? The answer is obviously:

$$\frac{\text{£}500 \times 5 \times 1\cdot4071}{4071} = \text{£}86\cdot41.$$

It is a profitable exercise to calculate the varying amounts of interest and repaid capital contained in this uniform sum in successive years. The interest due at the end of the first year is £25, so that the capital repaid is £61·41, and the capital outstanding at the commencement of the second year  $\text{£}500 - \text{£}61\cdot41 = \text{£}438\cdot59$ . The interest due on that sum at the end of the second year is £21·9295, the capital then repaid  $\text{£}86\cdot41 - \text{£}21\cdot9295 = \text{£}64\cdot4805$ , and the capital outstanding when the third year opens £438·59 less this amount—that is, £374·1095. Proceeding in this way, we find that the amount of capital returned increases from one annual payment to the next, the instalment of interest due decreasing *pari passu*, until with the seventh payment of £86·41 the whole transaction is exactly closed.

#### LIFE INSURANCE.

There is no need to dilate upon the importance of the subject of life insurance. The computation of the premiums actually demanded by assurance companies is too laborious to be attempted in a school course, but the principles by which they are determined can be readily illustrated by examples which, though improbable, are perfectly possible. Let us suppose, for instance, that a father, elated by the birth of his first boy, wishes to celebrate the event by securing for the newcomer a handsome gift of money to be paid to the latter on his twenty-first birthday. Let us further suppose that he can devote £100 to this interesting purpose, and that, with that sum in hand, he approaches an assurance company. What sum will the company guarantee to give the boy if he survives the perils of infancy and is alive twenty-one years hence?

To compute the amount, the company actuary takes note of the fact (which the present reader will find set out in the invaluable "Whitaker's Almanack," under the heading "Expectation of Life") that, out of 1,000 male babies born, 708 reach their majority. He then proceeds upon the assumption that a large number of fathers, say 1,000, desire, simultaneously, to make a similar provision for their new-born sons, and argues as follows. Allowing interest at say 3½ per cent. per annum, the total sum in the hands of the company at the end of the term of twenty-one years would be  $\text{£}100 \times 1,000 \times 1\cdot035^{21} = \text{£}205,940$ , the last figure being the amount of £100 in twenty-one years at 3½ per cent. per annum compound interest. Since there will be only 708 claimants left to divide this sum, the amount that can be promised to each  $\text{£}205,940/708 = \text{£}290\cdot876$ . In other words, a father can, under the conditions stated, secure for his son nearly £2·91 for every pound he is able to pay as a premium on the day of the child's birth.

With the help of the tables of expectation of life and compound interest, a class of girls dividing the computation among them, can calculate the premiums appropriate to less hypothetical cases than this—for example, the annual premium for an "endowment policy" taken up by a woman of forty to mature at the age of fifty, or at her death if it occurs before that age.

#### BANKS.

I conclude with a few suggestions about the treatment of that highly important institution—the bank. Everyone appreciates the use of a bank as a custodian of a customer's money and knows that, in addition to being ready to hand over any part of this money to a person authorised by the customer's cheque to receive it, the manager is also prepared to give interest on sums left "on deposit." With regard to this aspect of the bank's work, one has only the obvious suggestions that it is profitable to explain and illustrate the operations of drawing, crossing, and endorsing cheques, to indicate the difference between cheques payable respectively to "ordér" and to "bearer" (comparing them with postal orders), and to compare the methods of computing interest on deposits and the general custom of banks in reference to withdrawal with the methods and rules of the Post Office Savings Bank. What are not generally understood are the functions of banks in relation to industry and commerce. These may be considered under two heads: (1) the services of banks in relation to the currency, and (2) their services as furnishers of capital.

An argument of the following type has proved useful in elucidating the former of these two functions. Imagine an isolated, self-contained township X which as yet knows nothing about banks, and let it contain ("if possible," as Euclid says) a butcher B and a draper and outfitter D. It may be regarded as inevitable that these tradesmen and their families will frequently need one another's goods. We may suppose that for some time they conduct their mutual transactions on the principle of "cash with order," each paying, in the local currency, for goods at the moment of purchase. But as they develop relations it may occur to them that this plan, though obvious, is both inconvenient and unnecessary. Having learnt to trust one another, they may agree, instead of paying for each article purchased, to record the values in writing—B keeping account of food supplied to D, D of clothing supplied to B—and to "settle up" only at certain stated intervals. It is clear that, upon this plan, the two families might do a great deal of business with one another, and yet square their claims by the exchange of quite small output of cash. We may next imagine that their neighbours, impressed by the usefulness of the idea, conceive the notion of making it universal in the town. How is the plan to be carried out, in view of the fact that in these cases the relations between two given persons are bound to be more or less one-sided? (For instance, although the doctor's family will constantly need beef and mutton, the butcher's may be obstinately healthy.)

It is here that some public-spirited and universally trusted inhabitant will find his opportunity for social service. He will start an office where he will undertake to keep a record of all the debits which each townsman incurs towards another. To facilitate the book-keeping, every purchaser who makes use of the new institution will be required to hand the seller a voucher (*i.e.* a cheque) which, when transmitted to the philanthropist at his office, will authorise the latter to transfer such "credit" from the purchaser's account to the seller's. But when the thing is done on a large scale, even in the most idyllic community, will be found necessary to devise some means for preventing an inhabitant from incurring debits which he could not meet if he were called upon to "settle up." This problem will be solved by the adoption of a rule that no one shall be permitted to incur a net indebtedness greater than the sum of cash which, in accordance with his means, he is prepared to deposit with the philanthropist. The institution thus constituted may now be called a bank, and it is clear that it will make it possible for the citizens of X to do business with one

another to an amount exceeding indefinitely the total value of the sums they have deposited with the banker as guarantees of their solvency.

Next let the inhabitants of X discover, and enter into business relations with, the dwellers in another town Y. Then so long as the primitive principle of "cash with order" persists, we shall have, from time to time, the absurd spectacle of messengers conveying gold from X to pay for goods bought in Y passing on their way other messengers bearing gold from Y to pay for purchases made in X. This inconvenience could be ended only if Y also started a bank which entered into relations with the bank of X. It would then be possible for a tradesman of X, ordering goods from a manufacturer in Y, to pay, not by sending gold, but by transmitting a cheque on the bank of X which the manufacturer would hand over to the bank of Y, where its value would be added to the debits which that bank is accumulating against the inhabitants of X. Meanwhile a similar process would be going on in the bank of X. The result would be that, instead of a double stream of gold incessantly passing both ways between X and Y, there need be only an occasional settlement of the balance of debits recorded by the two banks. Thus the business relations of the two towns could go rapidly forward upon the basis of an amount of gold which, if the original method of payment had not been superseded, would have been totally inadequate to support them.

The third stage is reached when the financial dealings between X and Y become part of a system involving, as in modern England, a vast number of towns and villages, each with one or more banks. There then arises the need for an institution that shall do for the different banks scattered throughout the country what the original bank of X did when it extended to all the inhabitants of that town the mode of financial intercourse first devised by our friends B and D. There must be, so to speak, a bank of the banks. Here we arrive at that celebrated institution, the Bankers' Clearing House, which is, in essence, an office serving the various banks in precisely the same way as the philanthropist of X served his fellow-townsmen when he began to keep account of their claims against one another. The parallel is carried further. For, just as our first banker found it necessary to require his clients to deposit cash to meet their prospective net liabilities, so the banks which use the Clearing House are obliged to furnish deposits which are entrusted to the safe-keeping of the Bank of England, and guarantee the security of the mutual adjustments of

credit that are effected daily between the banks concerned in the arrangement.

At this point of the course it would be proper to give one or two lessons to elucidate the prerogative position and special functions of the Bank of England. There is, however, no space to give here the details, which will be found lucidly set forth in Straker's "The Money Market" (Methuen), in Barker's "Cash and Credit" (Cambridge Manuals), and in other books of similar scope.

To round the subject off, it may be useful to point out that the method of argument and illustration that led us from the friendly tradesmen to the bank of X, and thence to the Clearing House with the Bank of England behind it, can be extended to show how the City of London became the financial clearing house of the civilised world, so that traders at the opposite ends of the hemisphere or (a thing which is more remarkable) living in neighbouring countries have long been accustomed to settle their accounts by means of "drafts on London." For the details of the mechanism by which this immensely important part of the nation's (and the world's) business is carried on the reader must be referred to books such as those just cited.

Finally, a few words must be said about the bank as a furnisher of capital to industry. Returning to the primitive bank at X, we can easily understand that as confidence in the institution grew, and deposits increased beyond the amount found necessary to support the current business of the town, the public-spirited manager would seek some means of making himself and his institution still more useful. Being consulted, for example, by a trustworthy farmer who was anxious to build a new barn but had not the money needed to pay for the materials and the labour, he would take the responsibility of allowing the enterprising agriculturist credit beyond the amount covered by his deposit, accepting as "security" a lien upon the produce of the forthcoming harvest, and demanding the payment of "interest" for the accommodation. Or, being himself a manufacturer, he might invest some of the superfluous wealth entrusted to him in extending his works and buying new machinery. As this branch of the bank's business developed, the manager would invite additional deposits by offering to give interest upon them, covering his fresh responsibility to his clients by exacting a higher rate of interest from borrowers like the farmer, or by crediting to the bank a proportion of his profits on the capital transferred from the bank to his own business. The histories of banking illustrate both these ways in which banks began to climb to their present position

as indispensable factors in industry. For the further development of the theme the reader must once more consult treatises such as those I have mentioned.

It remains only to recommend that the course should not conclude without the examination both of one or two examples of the statement issued weekly by the Bank of England and published in the daily and financial journals, and also of either the monthly statement or the annual balance sheet of some representative joint-stock bank. The teacher will find in these materials for many useful arithmetical exercises, ranging from the addition of "tots" to relatively abstruse calculations about the value of immature "bills."

### THE USE OF BOOKS IN AMERICAN SCHOOLS.

By HILDA J. HARTLE, B.Sc.

Mary Ewart Travelling Scholar of Newnham College  
Cambridge, 1915-16.  
Homerton College, Cambridge.

TO those of us brought up to reverence books, it comes as somewhat of a shock to find books regarded merely as tools, to be used as required and discarded as soon as the work is done. Many of us were taught to regard the printed word as sacred, and any skipping on our part was met by severe reproof. The American student, on the contrary, is brought up to regard books largely as means to an end, and receives considerable training in the suitable use of books. The American undergraduate probably needs more guidance than his English rival because of his younger age and less extended experience on entering college. However this may be, he certainly is not left so often to wander aimlessly round the library, but is led to consider the various reasons for which one reads, and to distinguish methods of reading which are suitable when dealing with informational material from those which are desirable when reading for literary appreciation. The desire for business efficiency which is so characteristic of American education in general, may be seen in the work of the schools. Thus in the elementary schools more and more time is being devoted to silent reading, and less attention is paid to oral reading, since few of the children will be called upon to read aloud in later life.

The thought and time which are being devoted to the subject of the reading and use of books are shown by the many investigations which are being made. These are often undertaken by post-graduate students who are working for the doctor's degree. Thus from many universities are emanating theses dealing with

this subject, and often containing standardised tests for gauging the reading abilities of both elementary- and secondary-school children. I use the phrase "reading abilities" advisedly, since great emphasis is placed on the fact that the power of oral reading is a very different capacity from that of "silent thought-getting," and that the rate of reading is a very important factor, and must be measured by itself in both oral and silent reading.

These tests are used by their authors for measuring the reading efficiency of a whole school, or for comparing the results obtained by the use of different methods for the teaching of reading. One advantage of the huge numbers to be found in the schools of a large American city is that tests such as these can be applied to a sufficiently large number of children to make the results of value.

The reading tests devised by W. Gray, of the University of Chicago, will show the nature of the work that is undertaken as part of the inspection of many schools. These tests are twofold, one series being intended to judge the rate of oral reading and power of articulation, while the other is used to measure the rate of silent reading and the capacity of the child to obtain the thought from the printed word. In using the first series a card containing ten paragraphs of increasing difficulty is presented to the child, a similar card being in the hands of the investigator. As the child reads aloud the time required for each paragraph is noted, also the nature and number of mistakes made are entered. Some idea of the cleverness with which these paragraphs have been chosen, and graduated in difficulty, will be obtained by reading aloud the following extracts, which form the first, fourth, sixth, and tenth, of the standardised paragraphs for oral reading.

#### I.

A boy had a dog.  
The dog ran into the woods.  
The boy ran after the dog.  
He wanted the dog to go home.  
But the dog would not go home.  
The little boy said,  
"I cannot go home without my dog."  
Then the boy began to cry.

#### IV.

One of the most interesting birds which ever lived in my bird-room was a blue jay named Jackie. He was full of business from morning to night, scarcely ever still. He had been stolen from a nest long before he could fly, and he had been reared in a house, long before he had been given to me as a pet.

#### VI.

It was one of those wonderful evenings such as are found only in this magnificent region. The sun had set behind the mountains, but it was still light. The

pretty twilight glow embraced a third of the sky, and against its brilliancy stood the dull white masses of the mountains in evident contrast.

#### XI.

The hypotheses concerning physical phenomena formulated by the early philosophers proved to be inconsistent and in general not universally applicable. Before relatively accurate principles could be established, physicists, mathematicians, and statisticians had to combine forces and work arduously.

The complete test contains eleven paragraphs, and their order of difficulty was determined by experimenting with them on more than three thousand children.

In the second series, which deals with silent reading, the test consists of a story or a description printed on a card in three columns, and the rate of reading is judged by recording the time which the child requires for the reading of the middle column. This is determined by watching the eye movements as the child passes from the bottom of the first column to the top of the second, and again from the bottom of the second to the top of the third. In this way the rate of reading is determined, not at the beginning of the operation, but when the child has got into its stride in reading. In order to judge how much the child has understood of what has been read he is now asked to write all that he can remember of the passage, and after that to write the answers to certain questions.

The selection used for testing children of seven and eight years of age is as follows:

#### TINY TAD.

Tiny Tad was a queer little fellow with only two legs and a short tail. He was nearly black, too, and much smaller than most tadpoles in the big pond. He could hardly wait for his front legs to grow. "When I have them all," he said, "I'll leave this dirty water and go up into the orchard. What fun it will be to hop and hop and hop. If only I had a little brother to hop with me, I should be so happy."

It wasn't long before his legs began to grow. He moved about and kicked around until his legs were quite strong. "I am going out on the bank to see if I can hop," he said one night when he was just six weeks old.

The sun was hardly up next morning when a little toad jumped out of the water and hopped up on the bank. He was very small, but none too small for the little legs that wobbled under him. It was Tiny, the young toad.

The questions that the child is asked after reading this silently are:

1. How many legs did Tiny Tad have at the first of the story?
2. How did Tiny compare in size with most of the other tadpoles in the pond?
3. Which legs did Tiny wish would grow?

4. Where did Tiny say he would go when he got all his legs?
5. What did Tiny wish he had to hop with him?
6. What did Tiny do to make his legs grow strong?
7. How old was Tiny when he decided to leave the pond?
8. What part of the morning did Tiny choose for leaving the pond?
9. How did Tiny get upon the bank?
10. What size was Tiny at the end of the story?

For children of twelve and thirteen the following passage is used, and the questions to which the children are asked to write the answers are quoted at the end:

#### ANCIENT SHIPS.

There is no more interesting study to marine architects than that of the growth of modern ships from their earliest form. Ancient ships of war and of commerce equally interest them; but as they study the sculptures and writings of the ancients, they find records of warships far outnumbering ships of commerce.

Among ancient nations, the Greeks and Romans were the best shipbuilders. Judging from the description of their works, their crafts must have been elegant, swift, and seaworthy. This is more than can be said of many of the more showy productions of the shipyards of Britain, France, and Spain even so late as the Middle Ages.

There is no question now that the ships of the ancients made extended voyages urged by oars alone. A thousand oarsmen were sometimes required to man the sweeps, besides a crew of five hundred soldiers and sailors. Written descriptions give us splendid pictures of fleets of these ancient ships moving swiftly along the villa-dotted shores of Greece, or majestically sweeping into some mirror-like harbour, and with sounding trumpets saluting the setting of the low, western sun.

We are able to make from old records very fair models of these ancient warships. One writer describes the great galley of Philopator as propelled by forty banks of oars. His description is questioned, for however plain the description of these warships may be, no one has yet shown the precise manner in which forty banks could be arranged. A bank of oars means a row on one deck, and while there are many pictures of galleys they show nothing more than a trireme, which is a ship of three banks. A ship of forty banks puzzles our imagination.

#### Questions on the above:

1. To whom is the study of the growth of modern ships interesting?
2. How do the records of warships compare in number with the records of ships of commerce?
3. What peoples were the best shipbuilders among the ancient nations?
4. How did the ancient vessels compare in

elegance and swiftness with the more showy productions of the Middle Ages?

5. What kind of voyages were sometimes made by ancient ships when propelled by oars only?
6. What was the total number of men required on some of the ships?
7. Explain clearly what a "white villa-dotted shore" means to you.
8. From what source do we secure the ideas which enable us to make models of the ancient warships?
9. What does a "bank of oars" mean?
10. Why do we question the statement that the great galley of Philopator had forty banks of oars?

As previously mentioned, tests such as the above are used for the purpose of school inspection, and the results are set out so clearly that even the dullest must understand. By their aid teachers can be convinced, almost against their will, that undue time is being spent on oral reading, and that their children are below the average in the understanding of what is read.

Again, by these methods, clear demonstration can be obtained that rapid silent reading and good understanding usually go hand in hand, and that increase in the rate of reading may be gained by practice and by the use of good methods. Apart from any idea of inspection, these tests could be made very useful to the children themselves by forcing upon them to notice some of the reasons for which we read, and in helping them to form habits of rapid concentrated work.

Although training in the appreciation of good literature is by no means omitted from the education of American children, yet considerable time is devoted to inculcating good habits of reading and to the teaching of the use of dictionaries and of encyclopædias. Children are encouraged to make use of the public libraries. It is not unusual for one of the staff of the public library to visit the elementary school in order to give a short course of lessons on the use of the library, showing the children how to consult a card catalogue, and how to look up a given subject in the books of reference. This is just one example of that ready co-operation that one so often finds amongst the various educational agencies in America. Not uncommonly the school library is a branch of the public library, but situated in the school building, and the school librarian a member of the public library staff. This librarian will be found at the public library on Saturdays, so that the children who know her well will easily pass from the use of the one kind of library to that of the other. This connection is further strengthened by the fact that a child-

ren's room is to be found there in charge of a specially trained member of the staff.

I recall one such room that I saw in the free library of one of the suburbs of a large American city. It was furnished in oak with small tables, decorated with flowers, and small arm-chairs. The walls were lined with books beloved of children, and, luxury of luxuries in America, there was an open fireplace. The librarian—a woman, as is so usual—not only advised the children as to the books they should read, but also held a story hour each day after school to which many small visitors came. Such friends had she become with some that she had taken a group of them out o camp that summer.

The librarian is usually a very efficient person, often more carefully trained than the teacher. At one of the schools in Chicago I found that, in addition to her other duties, she supervised the study of the older children, and many of the children were discovered to be unsatisfactory in their work their names were given to her so that she might offer them individual help when in the library.

America spends much more money on her libraries than we do in England. Consequently the children have access to a great wealth of books, and even in the small, one-roomed school of some remote rural district a suitable selection of books will be found. In many of the elementary schools the children use books freely, and are in the habit of consulting them in order to find the subject-matter of their discussions in class. This was especially noticeable in such schools as Prof. Merriam's Experimental School at Columbia, Missouri. This is one of the four schools mentioned by Prof. John Dewey in his book "Schools of Tomorrow." I found there that the older children—that is, children of the ages twelve to fourteen—spent the greater part of their time in silent reading in preparation for future discussion. The most striking feature in the equipment of the school was its shelves of books lining the central room, into which the staircase opened, and which formed the classroom of these older children. The classrooms of the younger children also contained many books: his school building was specially designed by Prof. Merriam himself, and bears witness to his belief that to-day we obtain much of our information from books. So marked was the use of books in this school that one was tempted to deplore the small amount of time devoted by the children to observational and experimental work. It was, however, delightful to watch the ease with which these children made use of books.

The demand for good teachers in America is far in excess of the supply, and probably there is a deliberate attempt to minimise the difficulty

by supplying the schools with books, which partly explains the greater use of reading material in American schools. Again, the American publisher is not slow to produce the kind of book that will meet the needs of the child, so that there is an ever-increasing wealth of material for selection. Meanwhile the child is benefiting enormously by the training he is receiving in the use of books, a training which will stand him in good stead all his life.

## THE TRAINING OF PLAY LEADERS.

By M. JANE REANEY, D.Sc.  
Author of "The Psychology of the Group Game."

**A**LTHOUGH the value of play as a great educational factor had been recognised in all ages up to the end of the nineteenth century, there had been no real attempt to organise play on a national basis since the time of the Greeks.

Towards the latter end of the century the Playground Movement was started in America, and between 1894 and 1898 public playgrounds were established in many of the leading towns of the United States. The movement, although initiated by private enterprise, grew so rapidly that the municipal authorities and the educational bodies took it up; and the Playground and Recreation Association of America was formed to carry on the work. This association now has its representatives in every part of the country and holds an annual conference which is attended by delegates from every State.

In England, the Playground Movement has not reached the same stage of development, but has already made rapid strides in three main directions:

(1) The establishment of evening play centres.

(2) The organisation of vacation play schools.

(3) The establishment of public playing grounds in parks and open spaces.

The movement was inaugurated in England, as in America, by voluntary enterprise, and it is only recently that the subject has been taken up in this country by public educational bodies and grants made towards the maintenance of the play centres. The Regulations for Evening Play Centres published by the Board of Education, which came into force on August 1st of last year, show that the need for such work has at last been realised. In these the Board lays down rules for the proper organisation and supervision of play centres. The centres which are for children attending the elementary schools must be held on premises approved by the Board for the purpose. Each centre must be under a superintendent responsible for the general conduct, supervision,

and discipline, and the assistant staff must be adequate and suitable. All centres receiving a grant, which may reach one-half of the total expenditure, must be under the inspection of the Board.

The far-reaching result of the Playground Movement, both in America and in England, has been fully recognised. There has been a marked increase in school discipline and in efficiency and a decrease in truancy and juvenile crime which can be clearly traced to the introduction of organised play and games amongst the children of the poorer classes. The wonderful results following from the development of the Boy Scout Movement confirm this. At the same time we are gradually beginning to realise that in order to make full use of play as an educative and humanising factor, it is not enough to provide playgrounds and apparatus; the play must be in the hands of leaders and supervisors who have a knowledge of the great psychological principles underlying the instinct of play, and have been trained in the application of these principles in the playground.

In America this fact has already been realised, and courses of play have been established in which play leaders and supervisors of the public playgrounds are given such training.

In England as yet we have no facilities provided for the training of play leaders either for the play centres or for the public playgrounds. Many assistants at play centres realise, however, that they could do far better work if such a course of training were provided for them, and the time is therefore ripe for a consideration of the lines on which such a scheme should be based. The play leader requires very special training because he has to realise two conflicting facts: (1) that play is not truly spontaneous, but depends largely upon the imitative faculty which is such a marked characteristic of the child; and (2) that, if forced, play ceases to be play and loses its value. The play leader suggests and guides the play, but the guidance must be subtle, suggestion rather than command must be the rule.

It requires an expert in the matter to do this properly. The play leader needs:

(1) A knowledge of the psychological principles underlying the instinct of play.

(2) A practical knowledge of the kinds of games which appeal to children of different ages.

(3) A knowledge of the broad effects of different types of play.

(4) Experience of playground discipline and organisation.

Many theories have been advanced to account for the play instinct. Amongst these,

two of the latest suggest that the play of childhood follows the stages of race development, and that the higher types of play, such as the organised game, have been evolved as outlets for instincts which have been suppressed as a result of civilisation. It is interesting to note in this connection that the Anglo-Saxon race, which is noted for its war-like proclivities, is the only race which has evolved highly specialised national group games. Recent research has shown the far-reaching effects of suppressed instincts upon the development of the individual, and it is probable that a carefully thought-out course in play may do much not only for the mentally deficient child, but also for the abnormal child who is a nuisance to himself and others.

Again, the result of careful and prolonged investigation has shown that we can formulate definite play periods; roughly these are as follows, although there is much overlapping and children vary in the age at which each stage is reached:

Age 1-3. Experimental play.

" 3-7. Imitative play.

" 7-12. Imaginative and individualistic play.

" 12. Co-operative play.

A careful consideration of these types of play shows that each satisfies the changing needs of the child in his development, and a knowledge of this fact will go far to simplify the discipline required. Many other facets could be brought forward, if space would allow, to show that a trained leader is essential for the efficient development of play.

It is necessary, however, to consider briefly the form such training should take and the way in which it can be organised. Broadly speaking, the courses in play required are twofold:

(1) A short general course for teachers and social workers.

(2) A longer and more comprehensive course for play leaders, supervisors of playgrounds, etc.

The first should be an essential part of the training of teachers; it might therefore be instituted as a special course on the theory and practice of play, to be given in all training colleges, and would comprise a short account of the psychological principles underlying the play instinct, followed by lectures on the management and organisation of school games. A similar but rather modified course could be given in all great centres for the benefit of social workers.

The question as to what form the main course for play leaders should take needs discussion. It should certainly extend for at least a year, and probably many students would

benefit by a two years' course. The question arises as to whether the play course should be a special university course parallel with the general university course, or a special branch of the work of the physical training colleges already existing, or whether special colleges should be established for the purpose. In America the first course has been followed. Several universities have established chairs of play. In Pittsburgh University a professor of play was appointed in 1910, and many others have special play courses covering one or two years.

Whatever line may ultimately be followed in England, the play course will have to comprise the following main subjects:

(1) Elementary general psychology, elementary physiology, hygiene and first aid.

(2) Nature and functions of play. The play theories; the play periods; age and sex difference in play; factors controlling the expression of the play instinct.

(3) The history of play in education (Greek education, Froebel, Montessori, Dalcroze, etc.). The Playground Movement in England and America; the Boy Scout Movement; national folk games.

(4) Organisation of play centres, public playgrounds, including administration, discipline, playground equipment and construction and other technical details.

The full course would have also to include practical training. An apprenticeship served under responsible play leaders or administrators would be the natural method of securing such training. This would probably lead three months of the year being devoted to such apprenticeship, while nine months were occupied with the study of the theory of the subject combined with visits to different types of playgrounds and play centres.

Let us now turn to a consideration of the organisation of the play in towns and villages under the trained play leaders. Much has already been done in this direction; it is only possible to suggest the lines along which further development tends. These are briefly:

(1) The allotment of public playgrounds in the chief districts of all large towns. Each playground to be under the administration of a skilled administrator, assisted by trained play leaders. Certain days or parts of days to be allowed for each school in the district, and the organisation of the play of each school to be under the supervision of the playground administrator in conjunction with the teachers. The playground to be open after school hours for the use of children beyond the school-leaving age. Clubs, etc., to be formed for such children by the administrator and others.

(2) The organisation of play centres for the

children of school age and of recreation centres for other children and young adults. Each centre to be controlled by a trained administrator, assisted by voluntary workers who have taken the shorter course on play. In the country the organisation would be modified to suit the district, and would combine when possible practical courses with Nature-study.

At the present time we are only at the beginning of this great movement for the organisation of recreation for the children of the masses, but the public mind is already awake to its importance and to its significance for the training of the future generation, and it is to be hoped that in the great schemes of educational reconstruction after the war the Play Movement will take its right place and the training of play leaders become an actuality, as it is only by such means that it will be possible to make the highest use of this great natural means of education.

### SOME THOUGHTS ON SCIENCE TEACHING IN SCHOOLS.<sup>1</sup>

By Prof. W. A. HERDMAN, F.R.S.

I HAVE been asked to talk to you this afternoon about science teaching in schools—and especially biological teaching in secondary schools, and what it aims at and may be expected to lead to—in view of some contemplated development of further and higher courses of science in this school. It is delightful to hear of any further developments of science teaching, although, as will be explained more fully presently, I regard advanced courses for the few as less important than elementary courses for all; and I sincerely hope that your advanced courses will not be so formal and detailed as to frighten off any young inquirers into the beauty and meaning of Nature.

I am anxious to remove at the outset an impression one occasionally meets with, that science is something very special and difficult and remote from ordinary life and thought. Science is an affair of everyday life. It is often said—quoting Huxley—that “science is only organised common-sense,” but we can make it even simpler than that. When any of you look around, notice something, and draw a correct conclusion in regard to it, you are using the scientific method, and the fuller study of science is merely applying that method to a more detailed investigation of all the natural objects by which we are surrounded.

Some of you grown-up people may remember an old essay by Huxley, entitled “The Method of Zadig,” which appeared in the

<sup>1</sup> An address given (December 3 h 1917) at a Liverpool Secondary School for Girls, where it was proposed to develop further teaching in biology.

*Nineteenth Century* in the days of our youth, in which he quotes from Voltaire and discusses the story about the Babylonian philosopher who was studying Nature by the banks of the Euphrates one day when he met a number of court officials and soldiers running hither and thither searching for the lost pet dog of the queen.

"Was it," he asked the officials, "a small spaniel lame of the left fore leg and with long ears and such a kind of tail?"

"Yes, yes, where is it?" they said.

"I don't know."

"But where did you see it?"

"I have not seen it," replied the philosopher, "and I never knew the queen had such a dog."

Zadig was thereupon arrested and brought before the police-court by the Magi, or wise men (no doubt the education authorities of the day), and was accused of stealing the dog. Fortunately, the dog at that moment returned from its walk; but when the philosopher explained that he had drawn his conclusions as to the dog from minute examination of certain tracks he had seen in the sand, he barely escaped with his life, and was heavily fined for talking about things he had not seen and could not possibly know. I am not surprised. He must have been a very annoying philosopher; but his methods were simply those of science—correct conclusions drawn from accurate observations, and based upon the reasoning that *like effects imply like causes*.

Well, we have advanced, I hope, since the days of Babylon, although there may still be some Magi amongst us who do not approve of the scientific method. Their cause is hopeless, for the scientific method and an appreciation of science are, I believe, deeply implanted in most of us and only require a little encouragement and help to become evident and effective—to be drawn out by appropriate education.

Man is by nature a scientific experimenter. We probably all began when in the nursery to satisfy the instinct by breaking our first toy to see what was inside it, and by swallowing various undesirable objects. I believe, from observations on my own and other people's children, that most young folk have an inherent love of Nature and curiosity in regard to natural objects, which are in many cases lost later for lack of encouragement and direction. It depends largely upon early environment whether the child's love of Nature will die or develop. My plea is that every child should at least be given the opportunity of letting that little implanted germ of science develop into something that will be of value during the remainder of life.

I suppose we shall all agree that science is now coming to be generally recognised as an essential part of a liberal education. My contention, then, is that some training in science should form a part of the general school education of *every* boy and girl. It should begin in the elementary or preparatory school, and every child between twelve and fourteen should have an elementary course in each of the two main divisions of science—the observational or natural history sciences (zoology, botany, and geology) and the experimental sciences (chemistry and physics). The former, at this stage, would be mainly Nature-study, and the latter practical measurements and tests of the properties of matter. The teaching should be practical at every stage, the children doing as much as possible with their own eyes and hands. All children, then, must be given equal opportunities in science and in languages, or literary studies, until they are old enough to show which line of study they can most profitably follow.

In thinking about elementary scientific education there are two distinct things to be considered—scientific *information* and scientific *training*. Scientific information can be given by lectures or lessons on, for example, such matters as the most obvious phenomena of Nature, simple facts of astronomy as to the movements of the earth and moon, and of physical geography or the elements of geology, and such like. But the scientific habit of mind, which is the principal benefit to be derived from scientific training and is of very great value in every line of life, can be obtained only by practical work in one or more branches of science—such as experimental physics, practical chemistry, or practical biology.

As to what kind of science ought to be taught first in schools—what is most suitable for the youthful mind—it ought to be some guide to us to note that probably the earliest impulse that caused man to observe and to try to understand Nature around him (and that is the beginning of scientific study) was the pleasure he felt in the beauty and interest of natural phenomena, and in the diverse forms and marvellous ways of plants and animals—for example, of flowers and butterflies. It has been said that "the foundation of science is the love of Nature." This idea suggests a branch of Nature-study, the elements of biology, as the most suitable subject for the earliest training in science—a training that leads to using the eyes, to correct observation and accurate description, followed by the drawing of justifiable conclusions.

<sup>2</sup> Of course, the biological sciences in their modern developments are not only "observational," but also to some extent "experimental."

Another motive that comes later is the desire to make something useful, to understand so as to make use of the forces of Nature. That leads to chemistry, physics, and engineering, and all the applications which become scientific industries.

Finally, and still later, there is the desire for theoretical explanations which leads men to seek fundamental principles and laws of Nature. These, if taught at all in school science, in senior classes, should be demonstrated in relation to their practical applications seen in everyday life.

These three have been called<sup>3</sup> the "wonder motive," the "utility motive," and the "systematising motive," and in the case of most young minds they probably predominate in that order, and should therefore be provided for more or less in that order, though some overlapping is, no doubt, inevitable and even desirable, as minds, of course, differ considerably in bent and degree of development.

The first object in the school teaching of science ought, then, to be to create an interest, or encourage the interest which may already be there, in the attractive things around us in the public gardens and parks, in ponds and ditches, in fields and hedgerows, and to convert this interest into correct observations, inquiries, and conclusions.

Then, later, in cultivating the utility motive much elementary chemistry and physics can be taught by making one thing from another, by boiling and melting and freezing, and measuring and dissolving and precipitating, and by examining and making simple experiments with such familiar things as chalk and flint, air and water, coal and sugar, and the like—avoiding, in my judgment, all matters of theory, or postponing them until they seem to arise naturally in the inquiring mind after the acquisition of facts. Throughout, the pupils should be kept in the closest contact with realities, through their own senses and by means of their own investigation.

But, in addition to this practical or laboratory work, which will afford training in observation and experiment, I would attach importance to lessons or lectures on broad aspects of natural knowledge so as to stimulate interest in world-wide phenomena, such as coral reefs, volcanoes, and glaciers, the depths of the sea, the arctic regions, the life of the jungle, and other things that cannot be worked at in the laboratory, but are full of wonder and interest and very stimulating to the imagination, and should undoubtedly form part of any general education. Notice that I prescribe a form of science for *every boy and girl*, and I

do not believe in overmuch specialisation in school science.

In my opinion, then, this kind of elementary "science for all" is an essential part of a general education, and it must not be all or mainly measurements and observations of facts, but should be made human and interesting by descriptive lectures or lessons.

For example, some acquaintance with the lives and work of the foremost men in the history of scientific discovery and some account of how the discoveries were made should be a part of the course. The discoveries of Darwin, Pasteur, Metchnikoff, and Lister can be made intensely interesting in connection with lessons on the work in the world of such things as earthworms and silkworms and microscopic disease germs. And in Liverpool schools it would surely be appropriate to tell, in any course on elementary zoology, how the pioneer work on the life-histories of many of the lowest forms of animal life, creatures the enormous practical importance of which in the world is only now coming to be recognised, was done about forty years ago in Rodney Street by two well-known Liverpool men, Dr. Drysdale the physician and Dr. Dallinger the Wesleyan minister. They were both expert workers with the microscope, and the reason they worked together in Dr. Drysdale's house was that the work they were doing was a two-man job. The minute animal the life-history of which was being followed under the microscope must never be allowed to escape from the observer's eye, so while Dr. Dallinger had his breakfast Dr. Drysdale was at the microscope. They kept watches and took turn and turn about, and while the one slept the other was at his post. And in that way they discovered and recorded all the complicated changes that take place in the lives of these minutest of animals, the monads of organic infusions. Probably there are similar pieces of scientific history of local interest that could be utilised in the schools of most cities and other parts of the country.

It is of interest to everyone, and ought surely to be of importance to point out to young people, the many ways in which the results of scientific investigation affect matters of daily life, and that can perhaps best be done by telling how the investigations arose and the discoveries were made. In the days of Huxley and Tyndall inspiring demonstration lectures were given illustrating the history and development of science, which must have had an arresting and awakening influence on many young minds. Such lectures on the romance of science encourage a love of the natural world, bring the imagination to the very crest of the advancing wave of knowledge, and suggest the

<sup>3</sup> In a recent British Association Report on Science Teaching in Secondary Schools (1917). [See pp. 128-132 of this issue.]

need for further investigation. They awaken the spirit of research, and should always accompany practical laboratory work in a general course of "science for all."

And now let me mention one or two points in which I do not wholly agree with some scientific and educational authorities of the past.

First, I cannot support an extensive use of what is called the "heuristic" method in teaching practical science. It is quite unnecessary nowadays in a general course on science to make the pupils suppose that they are rediscovering what the history of science provides for us. Surely, living in the twentieth century, we are entitled to take the fullest advantage of the achievements of our predecessors and need not retrace the devious paths that led to their results. A little heuristics may be profitable on occasions, but much of it leads to a grievous waste of time.

I entirely differ from those educational or scientific authorities who have laid it down that one ought to teach only what the pupils can see for themselves, so that they may in their practical work or other observations, as it were, check and verify the instruction given. That is sound enough in regard to part of the work—that part where it is possible for the pupils to make their own independent observations; but to rule out all other matters as unsuitable for school teaching leads to the loss of much that is interesting and instructive. Are children to know nothing about the habits of whales, kangaroos, and ostriches because we cannot produce them in the classroom for investigation?

The Great Barrier Reef of Australia is one of the natural wonders of the world. It is a coral reef more than a thousand miles in length and in places extending to more than a hundred miles from the coast. It is a demonstration on the grandest scale of what animal life can do in building up solid land, the crust of the earth. I am sure that a school lesson on the great reef and the life and work of coral polypes would be full of interest and quite scientific, although neither teachers nor pupils were ever likely to visit the north-east coast of Australia.

There is still another controversial point on which I should like to express my views. We have been told lately by some high authorities at educational conferences that humanistic subjects can, and should, be taught scientifically, and the natural sciences studied in a humanistic spirit, and that then all will be well educationally, and apparently the inference is that it does not matter much what you are taught so long as the spirit is as prescribed.

These are fine sentiments—brave words—but only words, I fear. Of course, we all teach

our subjects in what we regard as the best way, whether humanistic or scientific; but the counsel I have quoted leaves untouched the subject-matter to be taught. You can get no knowledge of science by having other subjects which are not branches of science taught to you in a manner called scientific. What you must have is science itself, whether it be taught to you in what educationists call a scientific or a humane method.

And now possibly it may be of some use if I say a few words as to biology<sup>4</sup> especially, as a school subject. The value of biology in relation to any form of liberal or general education is very great, since this branch of science has application to much in our daily life, and an economic value in many important industries.

I prefer, as you may have noticed, to use the term biology, re-introduced and popularised in the early 'seventies by that great man of science and educational reformer, Prof. Huxley, rather than botany and zoology. Biology is more general and less specialised. It includes the elements of zoology and botany and elementary physiology, with applications to hygiene, agriculture, and much of what is coming to be called domestic science. It is not, as some think, simply zoology and botany, but rather what is common to those two allied sciences—the fundamental facts and principles of life, of protoplasm, the physical basis of life, the only living thing in the world, and its manifestations or vital phenomena as seen in various organisms high and low, some of them plants and some of them animals. Botany alone, zoology alone, will not give all we want as an introduction to the study of life in the world around us.

I have heard it stated by those who have not tried that it may be difficult to get the materials for teaching biology practically in schools. There is nothing in this objection. The necessary animals and plants are cheap and common and can be obtained almost anywhere. Any neighbourhood with gardens, parks, hedges, and ditches, supplemented by school aquaria and insect cages, and, if possible, even a small museum, will provide material for courses in elementary biology.

As to the instruments, a great deal can be done with a small pen-knife, a pair of scissors, a few stout needles, and a hand lens. A little microscope work is desirable now that the lowest and simplest of animals—the protozoa and micro-organisms in general—are recognised to be of such great practical importance.

<sup>4</sup> I am consciously throughout laying stress especially on the biological or natural history side of the science studies in the hope that I can be of use by doing so, but I assume that there is a similar course in the experimental sciences (physics and chemistry) running concurrently or perhaps in alternate terms.

in the world around us. For example, the yeast plant can be grown in Pasteur's solution and examined under the microscope; moulds, fungi, bacteria, Dallinger and Drysdale's monads, and many other lower organisms can easily be kept in jars of various organic infusions and used to illustrate lessons on our unseen friends and foes constantly working for our weal or woe, helping in the preparation of our food or causing dire disease.

Both animals and plants should be shown alive and should be grown in the laboratory. There is really no difficulty in this. Plants can be grown from seeds, and insects reared from eggs. In spring frogs' eggs can be kept and hatched, and the tadpole stages studied with much interest and profit. In summer the relation and practical importance of insect visitors to flowers, the recognition of injurious and beneficial insects, and their relation again to bird life are all obvious subjects for the elementary biology of a school course. And I should hope that it would be possible to vary the work in school by visits to a large museum in winter and by some field work and expeditions to neighbouring ponds in summer. Some physical geography or elementary geology could also be taught on such biological rambles.

In order to get the full benefit from any plants and animals we are studying we must try to get to know them individually and enter into their lives. We must approach each new type, such as a frog or a sea-weed, in the spirit of "Well, who are you? Where do you live and how do you get along? Are you a success in life, or are you dying out? And if so, why? Who were your ancestors, and who are your relatives and friends at the present day? What are the difficulties of your environment, and how are you trying to overcome them?" We should even make such curious inquiries as: "What are your diseases, and have you any parasites, and if you have, are they a nuisance or helpful to you—as some parasites sometimes are?"

Just as to be a good fisherman you must think like a fish—that is, try to think the fish's thoughts—so to be a good biologist you must enter into the life of the living things you study. I always tell my students to remember they are trying to understand, not the dead things in the laboratory and museum, but living Nature in the field, the pond, and the sea.

The elementary biology course will form a natural introduction to that acquaintance with the working of the human body, and the elementary laws of health, which all young people should have towards the end of their school career. For this purpose general bio-

logy should in higher classes develop into zoology treated from the physiological point of view—that is, the animal (frog, let us say) should be studied as a machine in action, so as to illustrate all the important processes of life in a higher animal, such as digestion, respiration, nerve-action, and reproduction. The nutrition of the body in relation to dietetics, respiration and the need for ventilation, and many other points in connection with personal health can be introduced simply and naturally during the study of a typical animal which has life-processes more or less similar to our own. The simpler phenomena of heredity and the lessons they teach would also naturally find a place here.

If such a course were generally adopted in school education, it would lead to the diffusion of sound biological thought on public health and other social questions. It would surely be a great gain to the community if many girls were to become scientific observers and thinkers in regard to all such matters of everyday life.

And now, if you ask me, What does all this natural science I am advocating lead to—what is the object in teaching *science to all* at school? I answer: First, to give every boy and girl the opportunity of finding out whether they have any special aptitude for a scientific career and ought to specialise in science; but, secondly, and even more important, to let those who do not continue scientific studies, who will never specialise in science, who have no idea of pursuing a scientific career, have just such an acquaintance with the elements of physics, chemistry and biology, and just such an insight into scientific methods of investigation and discovery, as will enable them afterwards, as ordinary citizens, to understand and appreciate the search for truth based on evidence rather than on authority, the value of accurate observation, clear description, and correct reasoning, to understand how the forces of Nature may be employed for the benefit of mankind, and to realise the sequence of cause and effect in regulating their own lives—and the importance of insisting upon the use of scientific methods not only in the management of business enterprises, but, more important still, in guiding the action of those who are entrusted with the direction of public affairs.

If next you ask me of those who, in their general course of science, find that they have a special liking and aptitude for either the experimental or the observational sciences and propose to study them further, then I may tell you that many careers of interest and usefulness seem to be opening up before them, and will probably continue to do so to an increasing extent in the future.

I hope some of you girls will be medical practitioners in the future. We need all the medical women and scientific women as investigators that we can get to take the place of the young men we have lost. Many sisters will, I hope, in the future take up the work that their brothers would have done. Science and medicine are most intimately related. A school course of science is an excellent introduction to medical studies at the university. The medical man cannot have too much science. Most of the recent advances in medicine have been due to scientific, and especially biological, discoveries. Pasteur's purely scientific work on fermentations and the study of the yeast plant led him through silkworms and vines to his discovery of the cure for that dire disease, hydrophobia. Lister, like Pasteur, started from studies in pure science, on the circulation of the blood in a frog's web, and so passed to inflammation and infection, and the antiseptic treatment of wounds. I have heard Sir David Bruce say that it was being a naturalist—a student of natural history—that set him on the right track in his various investigations of tropical diseases, such as the fly disease of horses and cattle in Zululand and the terrible sleeping sickness of the Congo.

And so it will be in the future. We are as yet only on the outskirts of these fields of discovery in natural history in relation to medicine. Three great sections of zoology have now become of prime importance amongst medical studies: parasitology; entomology, or the study of insects which are the great carriers of disease; and protozoology, or the study of the lowest and simplest microscopic animals which we now know are the causes of some of the most fatal diseases that afflict mankind.

Finally, it has been asked, Will science teach you *how to live your life* as well as how to make a living? That is too large a subject to enter on now. Let me answer it quite briefly in words uttered by the President of the Royal Society in a recent address. He said—and I entirely agree with Sir Joseph Thomson: "I recognise—and I know no man of science who does not—the necessity of literary studies as a part of the education of every boy and girl, but I must protest against the idea that literature has a monopoly in the mental development of the individual. The study of science widens the horizon of his intellectual activities, and helps him to appreciate the beauty and mystery which surround him. It opens up avenues of constant appeal to his intellect, to his imagination, to his spirit of inquiry, to his love for truth. . . . A knowledge of science brightens and widens the intellectual life, and is a constant stimulus to the imagination."

## THE SCHOOL CHILD DURING THE WAR—AND AFTER.

DESPITE the exceptional demands made upon the depleted staff of both its official and voluntary workers, the Report<sup>1</sup> of the Chief Medical Officer of the Board of Education for the year 1916, filled as it is with a mass of valuable and interesting information, shows that the work of the School Medical Service has still been able "to secure the maintenance of an irreducible minimum of its working." And, as in the reports of previous years, alongside the evidence of much good work initiated and achieved, there stands abundant proof of the large amount of leeway which remains to be made up before the avoidable wastage of child welfare has been reduced to such a ratio as can be regarded without feelings not far short of dismay.

In his prefatory letter to the President of the Board, Sir George Newman claims that the School Medical Service is now the recognised national agency for the advancement of school hygiene—that branch of public medicine which is concerned with everything that affects the healthy physical development of the child of school age. Thus viewed, and rightly viewed, it will be observed that school hygiene is concerned not merely with all that affects the individual child from its earliest infancy, but also with all those ante-natal conditions which have a bearing upon the future welfare of the child as yet unborn. "Medical inspection"—essential though this be, as a means to an end—is thus far from summing up the functions of school hygiene; the latter embraces in its sphere the whole physical condition and development of the child—beginning with ante-natal care and mothercraft, and, at the termination of the school age, being concerned with those agencies which have for their purpose the health of the adolescent and his preparation and equipment for life. Thus school hygiene is linked up with the public system of education on one hand, and with the public system of State medicine on the other—being, indeed, an integral and essential part of both; for its object is the development of the healthy, capable, and well-trained citizen of the immediate future.

The Great War has given a new and definite emphasis to the vital importance of the child as a primary national asset; and the dominant note in Sir George Newman's report is his insistence on the development of a sound

<sup>1</sup> Annual Report for 1916 of the Chief Medical Officer of the Board of Education [Cd. 8746]. (H.M. Stationery Office.) 1s. net.

physique as the necessary basis of sound and successful education:—

The future and strength of the nation unquestionably depend upon the vitality of the child, upon his health and development, and upon his education and equipment for citizenship. Great and far-reaching issues have their origin and some of their inspiration in him. Yet in a certain, though narrow, sense everything depends upon his physique. If that be sound, we have the rock upon which a nation and a race may be built; if that be impaired, we lack that foundation and build on the sand. It would be difficult to overestimate the volume of national inefficiency, of unfitness and suffering, of unnecessary expenditure, and of industrial unrest and unemployability to which this country consents because of its relative failure to rear and to educate a healthy, virile, and well-equipped race of children and young people. There is no investment comparable with this, no national economy so fundamental; there is also no waste so irretrievable as that of a nation which is careless of its rising generation. And the goal is not an industrial machine, technical workman, a "hand," available merely for the increase of material output and the acquisition of wage at the earliest moment, but a human personality, well grown and ready in body and mind, able to work, able to play, a good citizen, the healthy parent of a future generation. If these things be true, I believe they are, no reconstruction of the State can wisely ignore the claims of the child.

An immense amount of useful spade-work has been done towards the attainment of this end, and there are signs of substantial progress. The School Medical Service has won its way to recognition as a force not merely to be reckoned with, but also to be grateful for; local education authorities and their officials are furthering its progress by their enterprise, skill, and devotion; a new understanding of the child, of his nature, his importance, and his claims, has been developed. And hundreds of thousands of children are to-day already healthier, better, and brighter for the discriminating labour which has been spent on their behalf. Yet the fact remains that the records of 1916, as in former years, proclaim a large amount of ill-health, of bodily impairment, and of physical and mental defect. In addition to the great group of defective children—blind, deaf, halt and lame, feeble-minded and epileptic—for many of whom special schools have been provided, and to the large number of children not in attendance at any school on account of sickness or invalidism, medical inspection has shown that, of the six million children in attendance at school, many are so dull and backward mentally as to be unable to derive full benefit from schooling; more than 10 per cent. are verminous, and 10 per cent. ill-nourished, thus

suffering from conditions equally disabling from the educational point of view. Disease claims a toll still more heavy:—

Perhaps the largest contributor is dental disease, which handicaps children almost as seriously as it does adolescents and adults. Probably not fewer than half the children are in need of dental treatment, and a substantial number (not fewer than half a million) are urgently so. Again, upwards of half a million children are so defective in eyesight as to be unable to take reasonable advantage of their lessons. Many of them need spectacles, some ophthalmic treatment, others special "myope classes," and all of them careful supervision and attention. Next we must add diseases of the ear, throat, and lymphatic glands, another quarter of a million in a relatively serious condition. Then there come skin diseases, disorders of the heart, infectious disease, and tuberculosis. Many of these children suffer from more than one disability, but a year ago a moderate computation yielded not fewer than a million children of school age (not, be it observed, children in school attendance) as being so physically or mentally defective or diseased as to be unable to derive reasonable benefit from the education which the State provides. For 1916, owing to necessary modification in the system of inspection, it is not possible to render any more exact account than formerly, but there are no grounds for believing that the figures here quoted are otherwise than a moderate estimate, or under-estimate, of the existing condition of things to-day.

This is a serious state of things as regards the present, and pregnant with the possibilities of a future even more alarming. It can be remedied only by systematic and continuous attention, carried out wholeheartedly and persistently throughout the country. The machinery necessary for doing this already exists; what is needed is its systematic and effective application.

In some areas it is yielding adequate returns; in other areas it is insufficiently applied, or misapplied, to the problems presented; and in other areas again, particularly in regard to medical treatment, it is in abeyance, or wholly ineffectual, due in part to a failure to foresee the vital importance to the nation of the health of the children, and in part, perhaps, to a sense of false economy or even parsimony.

It is this "sense of false economy or even parsimony"—the outcome of an inability to realise the vastness, the complexity of the problem (and the wasteful extravagance which attends all piecemeal attempts to cope with it)—that constitutes the greatest obstacle to success. Not that the local authorities are wholly to blame for this. Sir George Newman points out that under existing conditions the school child passes through their hands somewhat as a "bird of passage." Before the

child comes to them it is often marked or maimed by previous experiences, and it leaves them to be often handed on to pass under conditions which modify, impair, or even destroy the good effect produced by their efforts.

Even their period of authority is not one of absolute and undivided responsibility. The treatment of the infant, of the school child, and of the adolescent comes within the purview of different, and sometimes of competing, authorities; so that, in each of these stages, there is an inevitable tendency to overlapping and confusion—an inevitable blunting of that sense of the call of duty which attends the knowledge that someone other than oneself is responsible for what has gone before, and that yet others will be called upon to fulfil and complete what we may have only partly done.

What is needed, under existing circumstances and under existing law, is therefore an effective unification of all the powers having for their purpose the healthy upbringing of youth: . . . an understanding of the whole problem as one and the same problem and an administration of the law affecting it as a unified and co-ordinated administration in every locality.

But unification of administration will be of little value if each local education authority has not continually before it a clear understanding of the proceedings which are necessary from a medical point of view in order to secure for every child of school age within its area the full value of the School Medical Service. The following are laid down as "the irreducible minimum" of what is called for in order to yield such results as the national need requires:—

(i) That every child shall periodically come under direct medical and dental supervision, and if found defective shall be "followed up."

(ii) That every child found malnourished shall, somehow or other, be nourished, and every child found verminous shall, somehow or other, be cleansed.

(iii) That for every sick, diseased, or defective child, skilled medical treatment shall be made available, either by the local education authority or otherwise.

(iv) That every child shall be educated in a well-ventilated schoolroom or classroom, or in some form of open-air schoolroom or classroom.

(v) That every child shall have, daily, organised physical exercise of an appropriate character.

(vi) That no child of school age shall be employed for profit except under approved conditions.

(vii) That the school environment and the means of education shall be such as can in no case exert unfavourable or injurious influences upon the health, growth, and development of the child.

Simple in themselves, these propositions collectively constitute a formidable policy of child welfare. Though it may not be possible to realise them all immediately, they deserve careful consideration; for they are put forward as a sort of minimum standard of the physical claim of the individual child—"of the child of the poor equally with the child of the rich."

A merely cursory perusal of the body of the report and of its several appendices cannot fail to impress even the casual reader with the enormous amount of unostentatious work which has been carried out under the Board during the year under review. Nor is there lacking encouraging evidence of good results. In addition to the routine records of the work of the School Medical Service and the administration of the Provision of Meals Acts, there are special sections dealing with nursery schools, with physical training, and with the control of juvenile employment in relation to health. These latter are matters the importance of which it would be difficult to exaggerate. They are essential items in the preventive medicine of the child and the adolescent, illustrating the means by which the normal child—who, after all, is of more value to the nation and to the future than is the deficient child—"may grow strong, healthy, and capable."

Amid all these reports, statistics, and deductions there stands out in dominant proportions the importance of the physical well-being of the child in relation to that life-long "education" which begins before its birth and ends only with the individual's decease. Nor can this be stigmatised as materialistic in the degraded sense of that word. Say what we may, it is by and through the machinery of our bodies, according to its quality and training, that life's work is done. The best results are unobtainable if the material be essentially poor or its development and shaping defective. A few years hence the children of to-day will constitute the nation to which we have bequeathed them. In their hands, then, will lie its destiny and its future, its honour or its shame. But ours is the present responsibility for that near time, and on us lies the plain duty of equipping them, to the best of our ability, for the burdens which they in turn will have to take upon their shoulders. There is nothing either faithless or ignoble in the realisation of how directly success, in its best sense, is linked up with the healthy, well-developed body in which—as with a beautiful and healthy house—is most likely to be found that good tenant, a sound and healthy mind.

## PERSONAL PARAGRAPHS.

**M**R. C. H. BLAKISTON has been appointed warden of Radley College in succession to the Rev. E. G. Selwyn, who has resigned with a view to a chaplaincy in the forces. Mr. Blakiston is a scholar of Christ Church and took a first in Lit. Hum. in 1901. From 1901 to 1903 he held the Craven fellowship, and he was the first student of the British School in Rome. Formerly Sixth Form master at Sherborne, he was in 1904 appointed assistant-master at Eton. As the Eton secretary to the Eton College Mission at Harrow he has taken a keen interest in industrial and social problems.

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**MR. G. W. TALLENTS** has been elected a governor of Harrow School in succession to Dr. Butler, late Master of Trinity. Mr. Tallents was head of the school in 1874, and two of his sons have since been head boys.

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**MISS I. M. DRUMMOND**, Oxford Final Honours School of Natural Science, has been appointed to succeed Mrs. Bryant as head-mistress of the North London Collegiate School for Girls. Miss Drummond has been headmistress of the Camden School for Girls for some years and now returns to the school at which she was formerly science mistress. She was a member of the British Association Committee on Science Teaching last year and contributed to the report of the committee a syllabus of a science course for a public secondary school for girls.

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**MR. FRANK ROSCOE**, secretary of the Teachers' Registration Council, has been chosen by the Liberal Party as the prospective candidate for the parliamentary division of Aston Manor, Birmingham. During his thirteen years' tenure as head of the Birmingham Training College for Men, Mr. Roscoe was well known in the district as a public speaker and lecturer, and he has contributed frequently to the Press and educational journals. He was formerly president of the Birmingham and Edgbaston Debating Society, at which institution the late Mr. J. Chamberlain—also a former president—graduated as a public speaker. Mr. Roscoe's main platform at the coming election will be the education question.

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**MR. A. C. COFFIN**, director of education, Bradford, has tendered his resignation on the ground of ill-health. He was asked by the Education Committee at its last meeting to withhold his resignation for two months and in the meantime to take such rest from his

arduous duties as his medical adviser recommends. Mr. Coffin is a native of Dorchester and graduated at the University of London in 1889. After service as a teacher under the London School Board, he became principal of the Normal Department of the Technical and University Extension College, Colchester. His work in this position soon led to an appointment on the Board of Education Inspectorate, and in 1903 he became director of education for Darlington. Three years later he accepted the office of secretary to the Newcastle Education Committee, and in 1911 received his present appointment.

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**MR. E. SALTER DAVIES** has been appointed to succeed Mr. Francis W. Crook—who resigned for reasons of health—as director of education under the Kent Education Committee. Mr. Davies, who is a native of Pembrokeshire and an exhibitioner of Haverfordwest Grammar School, took his degree in classical honours in 1893. He has had teaching experience at Glasgow and Cheltenham, and is a regular contributor to educational journals. A paper of his on "Higher Education and Advanced Courses" appeared in these columns in February last. Mr. Davies has served under the Kent Education Committee as its first inspector for higher education since 1904, and for the last two years he has also acted as assistant-secretary for higher education.

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**MR. HERBERT J. TYRER** has been appointed director of education at Farnworth, Bolton. Mr. Tyrer has had considerable experience in elementary education, having held appointments under the London County Council and the Salford Education Committee. He received his early education at the Wigan Grammar School, and in 1911 was appointed first headmaster of Scot Lane Council School, the first council school erected in Wigan.

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**THE** growing public interest in educational administration is shown by the large candidature list for the post of secretary to the Edmonton Education Committee. The 100 applicants include a brigadier-general and a marquis. The latter, Marquis S. M. E. Roault de Longueville De Bucy, of distinguished French ancestry and a grandee of Spain, is a British subject and has served in the Army for many years.

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**THE** Lord President of the Council, under the provisions of the Welsh Education Act, has appointed Principal D. R. Harris, Normal College, Bangor, to be a member of the Joint Education Committee of the

County of Carnarvon. Mr. Harris was Prof. Nunn's predecessor at the London Day Training College, and during the twelve years which he has spent at Bangor the college has been extended by the addition of four hostels, providing accommodation for 200 men and women students. Mr. Harris has for many years represented the Guild of Graduates on the Court of the University of Wales, and has lately represented the Court on the Central Welsh Board for Secondary Education. His wide knowledge of the requirements and conditions of education in Wales should be of great service to the Education Committee in the reconsideration of the whole question of education which will arise in the near future.

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MR. JAMES FORD SMITH has resigned the second mastership at Calday Grange Grammar School to take up the headmastership of the Dixie Grammar School, Market Bosworth, where Dr. Samuel Johnson was an usher as a young man.

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THE REV. J. Y. Batley has been appointed headmaster of Hamilton House School, Lansdowne, Bath. Mr. Batley was prizeman at Ridley Hall, Cambridge, and leaves the Grammar School, Stevenage, to take up his new post.

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MAJOR (TEMPORARY LT.-COL.) R. INGLIS, King's Royal Rifles, whose name recently appeared in the Honours List as a recipient of the D.S.O., is an assistant-master at St. Dunstan's College, Catford. He has been twice mentioned in dispatches.

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THE death of the Ven. Dr. Frederick Brooke Westcott, Archdeacon of Norwich and Chaplain-in-Ordinary to the King, removes a well-known and striking personality from scholastic circles. Dr. Westcott was born at Harrow, where his father, Dr. B. F. Westcott, late Bishop of Durham, was an assistant-master. Educated at Cheltenham College, he became a scholar, and afterwards a fellow, of Trinity College, Cambridge, and graduated as senior classic in 1881. Ordained in 1884, he was appointed to a mastership at Rugby, and in 1892 accepted the headmastership of Sherborne School. On his completion of twenty-four years as a schoolmaster he went to Norwich as canon-residentiary.

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THE death is reported of Miss Ethel Garvin, headmistress of Wimbledon High School for Girls. Miss Garvin filled the posts of headmistress of Shrewsbury High School and Notting Hill High School before succeeding Miss Hastings at Wimbledon. She has been

headmistress at Wimbledon for nine years, and her recovery from illness in 1917 was gravely prejudiced when part of the school was burned down.

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2ND LIEUT. H. A. DYER, R.F.C., who was previously reported missing while flying over the German lines in December last, is now reported killed. A son of the late Dr. A. E. Dyer, who was for twenty-seven years organist at Cheltenham College, he was a brilliant musician and composer, well known in the provinces and theatrical circles. He graduated in music at Oxford at the early age of twenty-two and held appointments as music-and choirmaster at Rugby School, Abbey School, and Bromsgrove School successively. He joined the Army in 1914 and served at the front for two years as a signaller and dispatch-rider in the M.T. branch of the A.S.C. He obtained his commission in the Royal Flying Corps in 1916.

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MESSRS. HODDER AND STOUGHTON announce for early publication a volume entitled "The New Teaching." The editor, Prof. John Adams, has secured the services of a group of specialists for the volume, among whom we note Dr. Rouse, Prof. Nunn, Dr. Keatinge, Dr. Buck, Miss Marsden, and Mr. F. Charles.

ONLOOKER.

#### THE MISUSE BY EDUCATION AUTHORITIES OF THE SUPPLEMENTARY GRANT.

THE Incorporated Association of Assistant-masters has drawn up a statement of facts dealing with the manner in which the Supplementary (Fisher) Grant has been allocated in the case of secondary schools in England and Wales. We agree with the officials of the association that if it were more generally understood in Parliament and throughout the country how public money voted by Parliament for a specific object is, in some areas, being diverted systematically to other purposes by the authorities whose duty it is to handle it, it would enable the Board of Education to exert its authority and to put an end to what is an abuse of the confidence placed in education authorities by the current regulations for secondary schools.

A renaissance in education has been heralded by the Press and leaders of public opinion as one of the effects of the world war on the national conscience; and the growing enthusiasm for education throughout the land has been indicated as an assurance of the triumphant passage into law of Mr. Fisher's Education Bill. But a study of the temperately worded memorandum of the assistant-masters, with its

record of the way in which education authorities have failed to avail themselves of an easy opportunity of showing their appreciation of the work of the schoolmaster, may well give rise to serious misgivings. Acts of Parliament and skilfully devised administrative schemes have eventually to be interpreted with skill, enthusiasm, and patient persistence by teachers in the classrooms of the country, if we are to secure an efficient and sanely inspired system of national education. To procure an adequate supply of efficient teachers—well educated and properly trained—is to solve most of our educational difficulties; but to expect to secure such an army if we offer schoolmasters and schoolmistresses the remuneration of the labourer is national madness. In all cases where the activities of the worker can be seen at once to affect the progress of the war, his wages have gone up by leaps and bounds; but the schoolmaster, without whose labours the most successful ending to the world conflict will be abortive, is allowed to suffer ever-increasing hardships, and even the help provided by Parliament is being withheld from him.

We shall be convinced that the nation is in earnest about education and really intends that its children shall have educational opportunities equal to those of other great peoples when it is willing to pay properly for them; and this willingness will become apparent when fear of popular indignation will be enough to make it impossible for education authorities either to offer efficient teachers starvation salaries, or to seek to secure the services of incompetents at low wages.

We commend the assistant-masters' memorandum for careful study to all persons who desire the improvement of education.

In the spring of 1917 the President of the Board of Education, in view of the generally recognised fact that the teaching profession was seriously underpaid, announced his intention of asking Parliament to increase the grant to both elementary and secondary schools. The need for the payment of higher salaries was emphasised in several speeches, and the necessary funds voted by Parliament on August 8th, 1917.

In the case of secondary schools, the grants for the year August 1st 1916–July 31st, 1917, were raised by a sum amounting on the average to about £2 per pupil in England, and £2 10s. per pupil in Wales (where salaries were very low indeed). The minimum grant to small schools was raised by £50 in England and £100 in Wales. Provision was also made for the payment of grant at the higher rate during 1917–18, and it was intimated that, in the Estimates for the financial year 1918–19, further funds would be asked for. In 1917–18, moreover, there was to be a special grant of not more than £400 for every advanced course approved by the Board.

The Board of Education, in the Regulations for

Secondary Schools, 1917, Cd. 8,541 (England) and 8,571 (Wales), stated that the primary object of the new grant was the improvement of teachers' salaries. The Board unfortunately refrained from attaching stringent conditions to the grant, and relied upon the discretion of the local authorities.

The new grant, if devoted entirely to its primary object, would suffice to raise salaries on the average by not much less than £40 per annum in England, and £50 in Wales. Even allowing for the fact that, while the improvement of salaries is the primary object of the grant, it is not necessarily in every case its sole object, we cannot as a rule regard increments of less than £30 (England) and £40 (Wales) as being satisfactory.

Our association maintains that, as the grant was made retrospective to August 1st, 1916, all increments to teachers should operate from that date. For some considerable time the financial embarrassments of teachers have been especially severe. Very few salary scales had been amended since the outbreak of the war, and in none was there an increase in any sense commensurate with the abnormal rise of prices. Moreover, in some cases the ordinary increments of salary which might have been expected in normal times were suspended owing to the war. The teachers thus affected found themselves earning less than peace-time salaries and faced with war-time prices. Such war-bonuses as had been given were as a rule very meagre in amount—£10, £5, and even less. Beginners, and masters who could manage to migrate, usually from permanent to temporary posts, did not perhaps feel so much of the strain; but the burden has been all but intolerable to experienced masters, as a rule men with considerable domestic responsibilities, who have remained at their posts. We know of many university men, some of them with honours degrees, whose remuneration during the period covered by the supplementary grant has ranged from fifty to seventy shillings a week. These sums are, of course, shorn of about one-half of their purchasing power by the fall in the value of money. We contend that the school authorities should have given to these men the last penny from a fund intended primarily for their benefit.

The Board evidently recognises the urgency of the situation, for in Circular 1,008 it recommends that the consideration of scales should be postponed for the moment, and that a substantial proportion of the new money should be distributed among the teachers.

We are glad to record that in some cases this has been done; but in the great majority of those cases which have so far been reported to us, the action of the school authorities has been disappointing. Many of these have, indeed, abused in the most flagrant fashion the trust reposed in them by the Board of Education.

Among the unsatisfactory features to be found in the action of the local authorities we may enumerate the following:—

*Delay in Allocation.*—The object of the grant is clear, the need for action urgent, and further delay therefore quite inexcusable.

*Inadequacy of Amount.*—Instead of the £30 or £40 which we should expect in England, and the £40 or

£50 in Wales, we find sums of £20, £10, and even less.

*Withdrawal of Existing War Bonus as from Date of Increment.*—The war bonus was already a charge upon the rates, to the relief of which the supplementary grant has therefore in such cases been applied.

*Lateness of Date.*—Many authorities grant increments, not from August 1st, 1916 (the date from which their own finances benefit), but from April 1st, 1917, urging the irrelevant plea that the grant is actually disbursed by the Treasury during the financial year which begins with that date. They thereby deprive their teachers of all benefit for the first eight months of the period covered. And in many cases still later dates have been chosen.

*Exclusion from Benefit of Masters who Resign after Working during the Period Covered by the Increment.*

—Thus, an increment may be retrospective to August 1st, 1916, but with a further stipulation that it shall be paid only to masters who remain on the staff during the first term of the next school year (1917-18). Those who change their posts in July, 1917, or before, lose the increment for the period during which they actually worked in the school.

*Use of the 1916-17 Grant to Engage Additional Masters for 1917-18.*—This practice is especially objectionable. If the additional appointments are made necessary by an increase in the number of pupils, the grant will also increase, thereby creating a fund to pay the new masters. If, on the other hand, the school was understaffed during the year 1916-17, the men who actually bore the burden imposed by the understaffing should get certainly not less than would otherwise have been given.

*Accumulation of the 1916-17 Grant to Provide for the Future Liabilities of New Scales.*—The supplementary grant should be regarded as a compensation, incomplete at the best, for the high prices now prevailing. Even if their salaries were raised by the full amount of the grant, teachers would still be suffering a heavier loss of income than almost any other section of the community, and certainly bearing more than their share of the national burden. This state of things is all the more serious when we remember that teachers were admittedly underpaid even before the war. Moreover, the new scales are largely safeguarded by the President's announcement, already referred to, that for 1918-19 Parliament will be asked to grant still further funds. Apart from these considerations, the scales instituted during 1917 are not such as to justify the accumulation of the grant, for their maxima frequently fall short of those used to illustrate the report of the Departmental Committee on Salaries in Elementary Schools. Furthermore, in too many instances the new scales bear very hardly upon non-graduates; and thus many men of long experience, and proven worth in actual teaching, derive no appreciable present relief or prospective advantage from a fund which they should share with their graduate colleagues.

There are about 670 grant-earning secondary schools in England and Wales, controlled by several hundred different authorities, each with its own methods of

allocation. We need scarcely do more than refer to the difficulty of collecting the necessary information. From a considerable number of schools we have so far heard nothing, and gather that in not a few cases this is due to the refusal of authorities to allocate. Without undue pessimism we may state that the later allocations are not likely to rise above the low level of the earlier, and that the list of bad cases cannot fail to lengthen.

It should be stated that, owing to the action of our association, an improvement may be expected in some cases. Nevertheless, the information given is of interest as showing what the local authorities will do when left to their own devices. Our individual staffs are sometimes almost powerless, and the burden of contesting hundreds of cases is heavy for our central Salaries Sub-committee. Everything seems to strengthen our long-standing claim for increased centralisation of salary-control; and it is to be hoped that the Board will not only attach in future more stringent conditions to the grant, but also insist upon a retrospective amendment in unsatisfactory cases.

## SCIENCE IN SECONDARY SCHOOLS.<sup>1</sup>

### METHOD IN SCIENCE TEACHING.

In recent years more attention has been given to method in science teaching than to substance. One result of this has been to promote the view that all subjects, in different ways and to different degrees, can be made to give a training in scientific method; and that, therefore, instruction in science has no specific educational advantage over that of any other subject in the curriculum taught by methods of deduction and induction. It will be shown later in this respect how science—by which is here meant all departments of natural knowledge which depend for their development upon observation and experiment—differs from other subjects of instruction, but a general statement as to the meaning and application of scientific method in science teaching seems to be necessary.

*Ambiguity of "Scientific Method."*—It has often been remarked that the adjective "scientific" has a double significance. Sometimes it is used to distinguish one kind of knowledge, such as physics, from another kind, such as history. At other times the distinction it connotes is not between objects of knowledge, but between modes of investigation—between the "conduct of the understanding" which alone leads to certain truth and ways of thought that inevitably end in error. The second sense of the word is evidently much wider than the first; for, while the realm of "scientific knowledge," though vast, is limited, the dominion of "scientific method" is universal, extending wherever there are facts to be determined or general truths to be ascertained.

If, however, it is admitted (1) that the chief business

<sup>1</sup> From the Report of a Committee appointed by the British Association to consider and report upon the Method and Substance of Science Teaching in Secondary Schools, with particular reference to the essential place of Science in General Education. The members of the Committee were: Prof. R. A. Gregor (Chairman), Dr. E. H. Tripp (Secretary), Mr. W. Abbott, Prof. H. E. Armstrong, Mr. D. Berridge, Mr. C. A. Buckmaster, Dr. Julian J. Clarke, Mr. G. F. Daniell, Miss I. M. Drummond, Mr. J. D. Dunkerley, Miss A. E. Escott, Mr. R. Cary Gilson, Miss C. L. Lane, Prof. P. Nunn, Mr. A. Vassall, and Prof. A. M. Worthington. The Report may be obtained from the Assistant Secretary, British Association, Burlington House, London, W. 1. 1s. net.

if the science teacher is to train in scientific method, and (2) that scientific method is the characteristic, not of science only, but of every properly conducted intellectual inquiry, the science teacher is perilously near to the surrender of his special claim to existence. For does scientific method imply the habits of observing facts with care, of classifying them clearly and exhaustively, of forming hypotheses without bias, of testing them with rigour? Then a good classical teacher may take the study of Latin grammar as "scientific" as the study of chemistry, while, under a bad teacher, work in the laboratory may be as little "scientific" as anything ever done in a Latin lesson. Again, does scientific method imply "respect for fact" and the pursuit of truth in defiance of prejudice? Then it may be maintained that the study of recent history offers a field for its exercise at least as favourable as (iv) an inquiry into the composition of water.

*Matter and Method not Separable.*—This paradoxical conclusion depends upon the assumption that the method of a scientific investigation can be regarded as separable from the matter, which is not correct. In other words, it is not strictly true that scientific method is one and the same wherever it is employed. The physical method and the historical method, for example, have common fundamental features, but cannot be simply identified the one with the other. In short, scientific method is an abstraction which does not exist apart from its concrete embodiments; and a person who desires adequate knowledge of it must study it in all its typical manifestations. No one ought to expect a training in scientific method acquired in one field of inquiry to be transferable to—that is, to guarantee competence in—a field substantially different from the former. This conclusion is illustrated and supported by many recent experimental investigations. For instance, Dr. W. G. Sleight<sup>2</sup> has shown conclusively that practice in one form of memory (e.g. the reproduction of the substance of a passage of prose) produces no general improvement of memory, but may even cause deterioration in the power to memorise material of a different kind. Ability acquired in memory exercises of one type is, in fact, transferable to exercises of another type only if the second contains special elements that are also characteristic of the former, and then only if the learner perceives and deliberately takes advantage of partial identity. Thus a boy trained in memorising series of numbers shows an improved power to memorise "nonsense-syllables" if, and only if, he has recognised that the use of rhythm is an aid to the mastery of the material in both cases.

It appears, then, that the training received in a specific course of study is an ability acquired in dealing with situations of a certain kind, and is of service outside the boundaries of the study only in situations which can be regarded as substantially identical with those within it. Scientific knowledge and scientific method must not, therefore, be thought of as distinct and separable things, but as things the relation of which is comparable with the relation between a living body

and its life. Just as the life of a body consists in its growth and activities, and in nothing else, so the methods of a science are nothing other than the ways in which it grows, reaching ever wider and deeper views of some aspect or department of Nature. The science teacher has not, therefore, to adjust or to choose between the claims of knowledge and of training, for the two are inseparable. Let him give his pupils the knowledge that (in Spencer's classic phrase) is "of most worth"—that is, the knowledge which best expresses the special genius of his science—and he may be confident that he is at the same time giving them the best training the subject can supply. It need only be added (for fear of misunderstanding) that this giving of knowledge is not to be confounded with the mere imparting of "facts." It implies in the pupil a genuine pursuit of knowledge—an activity, guided by the teacher, but motived from within, which represents, so far as the necessarily artificial conditions of teaching permit, the historic activities of scientific minds working at their best.

*Principles and Motives in Teaching.*—In selecting what is to be taught the teacher must take account not only of the intrinsic worth of the knowledge, but also of the varying powers and interests of immature minds at different ages. Among the motives which have prompted men to make those persistent attempts to understand Nature which we call science, three have always been especially conspicuous. First, and in a sense foremost, is delight in the intrinsic beauty and charm of natural phenomena—delight in the forms and ways of plants and animals, in the splendour of the heavens, in the surprising behaviour and transformations of matter under certain assignable conditions. To use a familiar phrase, the foundation of science is the love of Nature. Next, we may distinguish the motive—that springs from the perception that man can exploit the forces of Nature for his own purposes only if he is prepared to take the trouble to understand them—that man must become the interpreter of Nature if Nature is to become the handmaid of man. This is the motive that has created the vast fabric of "applied science." Lastly, there is the craving for theoretical completeness and unity—the motive that prompts men on one hand to seek "fundamental principles" in Nature, and on the other to organise their ideas about the different aspects or departments of Nature into closely knitted logical systems. These three—which may be called the "wonder motive" (in the absence of a better term), the "utility motive," and the "systematising motive"—are not, of course, to be thought of as working in isolation. In differing degrees all are, no doubt, present in all scientific activity. Nevertheless, they are evidently distinct sources of such activity, the relative predominance of which at different stages in the history of a science, and in minds of differing cast, may vary to a very great extent.

Our question resolves itself, therefore, into the following: Can we count upon the presence and activity of these motives in the minds of boys and girls, and is there any normal order of predominance among them? To the first part of the question, thus expressed, we can give a confident reply. There are few children, if any, who do not feel the charm of natural

Dr. Sleight's book, "Educational Values" (Clarendon Press), gives a full account of all the more important researches on the transference of learned abilities.

phenomena and cannot be led by it to pursue inquiries which, however rudimentary they may be, are yet in the direct line of the development of science. The "utility motive," represented by the desire to find out "how it works" or "how it is made," is notoriously conspicuous. The systematising motive, while apparently much more variable in strength, cannot be said to be inoperative in any normal child. With regard to the second and more important part of the question, it may be said (subject to the reservation mentioned above) that, although young minds feel the pressure of all the motives, yet each of the three enjoys its special period of empire. Children before an age which is not far above or below eleven years seem to respond most surely and actively to the direct appeal of striking and beautiful phenomena. From eleven or twelve to (say) fifteen or sixteen the "utility motive" assumes the mastery, and may, at least in boys, reach the force and volume of a passion. With the full advent of adolescence the "systematising motive" has for the first time its opportunity of predominance, but there seem to be many minds in which its full power is never developed.

*Practical Conclusions.*—The practical bearing of these observations is clear. It is important, in the first place, that the teacher should not fail to give due scope to the "wonder motive." A science lesson should not degenerate into a display of fireworks or into sentimental vapourings about the "marvels of Nature," but it is easy to fall into the opposite error. Science teachers have by no means always avoided it. It must be remembered that teaching which is not founded upon the pupil's direct interest in natural phenomena for their own sake cannot stimulate genuine scientific activity, and that no "scientific training" can be effective which kills instead of fostering the root from which all scientific activity has grown. In addition to this general consideration, applicable to all ages of the pupil, we draw the particular conclusion that the first stage in science teaching should be a stage of "Nature-study," of which the distinctive aim should be, not to establish the logical foundations of any science, but to awaken the pupil's interest in the more attractive and obvious happenings in garden and wood, in pond and field, in sea and sky, and to begin the work of disciplining this interest into scientific inquiry.

Next, it is suggested that to fail to make full use of the "utility motive" is to allow one of the richest sources of intellectual activity to run to waste. Many teachers of science are discovering that for pupils between the ages of twelve and sixteen (or later) the most effective method of instruction takes the form of an analysis directed to the discovery of the principles involved in the typical triumphs of applied science. In this method Archimedes' principle is regarded, not as a "property of fluids," nor as means of determining specific gravities, but as the principle that explains the flotation of ships; the study of the processes by which metals are won from their ores displaces chemical inquiries of academic interest; to study electricity is to analyse the working of the electric bell, the dynamo, the installation for wireless telegraphy. In other words, such topics as these, instead of being regarded

as "applications" of scientific principles, to be taught if time and the demands of a public examination allow, are treated as the foci of interest from the study of which the pupil's knowledge of the scientific principles is to emerge.

Lastly, we must recognise that the "systematising motive" is one that has long been worked in our schools beyond its natural strength. Not infrequently teachers of some experience express the doubt whether boys and girls are capable of studying science before the age of fifteen or sixteen. Still more often university professors of science express the wish that their students might come to them with minds unperverted by the teaching of the schools. Whatever truth these pessimistic suggestions contain is probably accounted for by the failure of teachers to mould their instruction in conformity with the natural development of children's minds. The young man (or woman) who teaches science in schools from the point of view of the university often achieves with the best intentions a disastrous amount of harm. The mischief will not be prevented until it is universally recognised that the logical theory of a science should be not the *terminus ad quem* of instruction, but the *terminus ad quem*.

#### EXPERIMENTAL AND DESCRIPTIVE TEACHING.

*Unique Value of Laboratory Work.*—The primary value of laboratory work in schools is that it brings the pupil into direct contact with reality through his own senses and his own manipulation. In this way only can he learn to see things in their right proportions, to distinguish the essentials of an experiment from the non-essentials, and obtain a firm grasp of a scientific subject. Reading about an experiment, or even seeing an experiment performed, cannot give that security of knowledge which practical contact affords.

Experience shows that when scientific knowledge has been secured by practical work it becomes part of the permanent mental equipment of the pupil. The laboratory is, further, the one place where the pupil learns to acquire first-hand evidence, and to distinguish between that and information obtained verbally or by reading; for this reason also it alone fulfils an essential function in an educational course.

It is possible to use scientific method in the study of history, languages, and other literary subjects, but applied in this way the method can never be accepted as providing the same means of training as laboratory experiment.

*Distinction between Manual Training and Experiment.*—Although the principle of "learning by doing" is followed also in courses of manual instruction in which each pupil is impressed with the necessity of relying upon himself, of arranging and carrying out his work in an orderly manner, and of interpreting instructions accurately, and though other advantages may be justly claimed for such work, yet there is always a decided difference between the best scheme of workshop exercises and the experimental work of a rightly arranged experimental course. In the laboratory the development of dexterity and skill is only a secondary consideration, and the attention is fastened on the answer given by Nature to the question put to it: on the method to be adopted for eliciting the

answer, on its significance when obtained, and on the degree of accuracy with which it can be credited.

*Preliminary Work to Systematic Instruction in Science.*—It is because of the demand thus made on the reasoning powers that in 1910 a Joint Committee of the Mathematical Association and the Association of Public-School Science Masters expressed the decided opinion that systematic work in science should not be taken at too early a stage; laying down that "it is undesirable that either formal physics or chemistry be taught in preparatory schools," and that "questions should not be set in formal physics or chemistry at the entrance or entrance scholarship examinations to the public schools." The same committee, however, recommended that instruction which could be taken at an early stage in elementary practical measurements of length, area, volume, mass, and density should be given by the mathematical staff and not by the science staff. Such work can be done in an ordinary classroom with the simplest apparatus, and is thus more easily co-ordinated with the mathematical lessons than when carried on in a room specially devoted to it. The course of measurements, including the use of simple balances, need very seldom exceed twenty hours of practical work; and there can be no doubt that it is of the highest value in giving actuality to the mathematical teaching. Unfortunately, mathematical teachers have often been found to have little sympathy with these practical methods of illustration.

Introductory work in science, whether in preparatory schools or in the lower forms of State-aided secondary schools, should consist of such elementary practical measurements as are referred to above, and of a course intended to interest pupils in natural knowledge and to encourage observations of animal and plant life, earth and sky, and of everyday phenomena manifested in them. Such observations provide material for cultivating the art of expression, and with suitable reading or descriptive lessons will create and foster attention to many aspects of Nature.

*Laboratory Methods and Scope.*—In laboratory courses two methods of instruction may be distinguished—the subject-method and the problem-method—one or both of which may be followed, or, more often, a combination of the two. The subject-method may be described as a system of impressing fundamental properties and principles upon the minds of pupils by means of a graduated course of experimental exercises. The pupils usually work independently or in pairs, but in some schools the same exercises are performed by a whole class simultaneously as a form of drill, in which case they tend to become of the type of cookery-book recipes rather than that of scientific experiment.

The problem-method aims at suggesting a motive and purpose for every experiment, and thus of creating the spirit of experimental scientific inquiry. It consists in facing a problem, and by means of experiment endeavouring to solve it and related questions which arise during the work. The intention is not, as is sometimes supposed, to make pupils discover for themselves laws and principles previously unknown to them, though to some extent this can be done, but rather to provide a continuous thread of reasoning for the prac-

tical work and a definite purpose for whatever is undertaken. It is obvious that this method demands much more intensive work on the part of the teacher than is required when a prescribed course of exercises is followed; and on this account varying opinions are held as to its practicability and value. What is wanted for the teacher is a laboratory which he has freedom to use exactly when and for whom the teaching requires it, and independently of syllabuses prescribed by external authorities, whether the subject-method with a definite laboratory course is being followed, or the ancillary method in which the experiment to be undertaken by any pupil may arise from his own demand, or be assigned to him to clear up some observed misapprehension, or as a challenge to test his knowledge of what he has been taught and his resourcefulness, or simply to give the final security of personal practical experience, as already mentioned.

The field which can be surveyed practically in any school course of laboratory work which forms part of a general education is necessarily limited in scope even when the subject-method is followed, and is more so when the object of the work is to encourage the natural spirit of inquiry, and thus to create a perception of the means by which new scientific knowledge is gained. Increased attention to laboratory exercises has, indeed, in recent years often been associated with a very restricted acquaintance with the world of science. The tendency has been to make all the teaching a matter of measurement, to the neglect of the human aspects of the pursuit of natural knowledge. The teaching is, in fact, inclined to be narrow and special rather than broad and catholic. Experimental work should bring appreciation of the precision and methods of scientific inquiry, but, in addition to this instruction, an attempt should be made to cultivate interest in achievements of research outside the school walls.

While, therefore, prime importance must be attached to adequate provision for laboratory work undertaken with the view of imparting a knowledge of experimental methods of inquiry, it is essential that there should also be instruction in the broad principles and results of scientific work which cannot be brought within the limits of a laboratory course. Every pupil should not only receive training in observational and experimental work, but should also be given a view of natural knowledge as a whole. The object should be to evoke interest rather than to impart facts or data of science prescribed by an examination syllabus, or even to systematise their rediscovery. There should be no specialisation before the stage of matriculation has been reached, and whatever instruction is given should be from the point of view of general education.

*Human Aspects of Science.*—Assuming that laboratory work is commenced at a suitable stage, the question arises as to the best means of presenting the broad view of scientific facts and principles desirable in a modern liberal education. It should not be possible for any pupil to complete a course at any secondary school without a knowledge not only of experimental methods, but also of the meaning of common natural phenomena. Much of this knowledge can be given, and is being given to an increasing extent, in connection with

the teaching of geography; but in any case descriptive lessons are required in which the aim should be to impart broad ideas, and promote interest in Nature, rather than to train in practical methods applied to a limited field.

It is desirable also, by means of general lectures, discussions, or reading, to introduce into the teaching some account of the main achievements of science and of the methods by which they have been attained. Science must not be considered merely as a burden of material fact and precise principle which needs a special type of mind to bear it. There should be more of the spirit, and less of the valley of dry bones, if science is to be of living interest, either during school life or afterwards. Everyone should be given the opportunity of knowing something of the lives and work of such men as Galileo and Newton, Faraday and Kelvin, Pasteur and Lister, Darwin and Mendel, and many other pioneers of science. One way of doing this is by lessons on the history of science, biographies of discoverers, with studies of their successes and failures, and outlines of the main road along which natural knowledge has advanced. It would be far better, from the point of view of general education, to introduce courses of this kind, intended to direct attention and stimulate interest in scientific greatness and its relation to modern life, than to limit the teaching to dehumanised material of physics and chemistry, which leaves but little impression upon the minds of boys if seen only "in disconnection, dull and spiritless."

Under existing conditions, which are largely controlled by prescribed syllabuses and external examinations, there is little opportunity for teachers to direct attention to the useful applications of science on one hand, or on the other to awaken interest in the solution of the mysteries which surround us, though this could be done incidentally in connection with lectures or practical work if the present pressure were removed.

History and biography enable a comprehensive view of science to be constructed which cannot be obtained by laboratory work. They supply a solvent of that artificial barrier between literary studies and science which a school time-table usually sets up. In the study of hydrostatics, heat, current electricity, optics, and inorganic chemistry, the attention which has been given to laboratory work has succeeded in developing the powers of doing and describing. The weak points have been insufficient attention to the broader aspects and to scientific discovery and invention as human achievements, and failure to connect school work with the big applications of science by which mankind is benefiting. The study of optics is seldom pursued to a useful point, and in the teaching of mechanics there are more failures than in other science subjects. The time-table is particularly overcrowded during the last two years in the State-aided secondary schools, the work is over-compressed, and the philosophical aspects cannot, therefore, be presented effectively. The extension of the normal leaving age to seventeen years would have a valuable effect in raising the potential standard of scientific knowledge, and in spreading intelligent appreciation of science throughout the country.

At present, as instruction in science proceeds in the school, there is a tendency for it to become detached from the facts and affairs of life, by which alone stimulus and interest can be secured. It is important that every opportunity should be taken to counteract this tendency by descriptive lessons in which everyday phenomena are explained and the utility of discovery and invention is illustrated.

Domestic science and hygiene are frequently introduced into girls' schools with the object of effecting a link between science and the experience of everyday life. It must be pointed out, however, that such courses are incoherent and of little value unless science or domesticity is the definite objective. If the scientific aim predominates, the course can be made to give a good training in elementary experimental science and should afford a useful background to the later practical study of domestic arts. If domesticity is dominant, the work cannot be accepted as an effective substitute for a proper science course.

*Summary.*—The observational work by which the study of science should begin opens the eyes of the pupils and may be used to train them in the correct expression of thought and of accurate description. The practical measurements in the classroom have for their object the fixing of ideas met with in the mathematical teaching. Every pupil should undergo a course of training in experimental scientific inquiry as a part of his general education up to a certain stage, after which the laboratory work may become specialised and be used to supply facts which may be a basis for more advanced work or to prepare pupils for scientific or industrial careers.

At suitable stages, when pupils are capable of taking intelligent interest in the knowledge presented, there should be courses of descriptive lessons and reading broad enough to appeal to all minds and to give a general view of natural facts and principles not limited to the range of any laboratory course or detailed lecture instruction, and differing from them by being extensive instead of intensive.

Finally, the aims of the teaching of science may be stated to be:—(1) To train the powers of accurate observation of natural facts and phenomena and of clear description of what is observed; (2) to impart a knowledge of the method of experimental inquiry which distinguishes modern science from the philosophy of earlier times, and by which advance is secured; (3) to provide a broad basis of fact as to man's environment and his relation to it; (4) to give an acquaintance with scientific words and ideas now common in progressive life and thought.

*The Poetry Review.* February, 1918. 68 pp. (F. Macdonald.) 1s.—The Review continues its good work in promoting the speaking of verse. It seems to have extended its area, and some of the schools are being drawn in. So long as a high standard and one sufficiently removed from the stage is maintained, nothing but good can come of the effort. There are in this issue a few short critical articles and one really notable poem, by Norah Richardson, called "Road to Tyburn, 1750."

## ITEMS OF INTEREST.

## GENERAL.

MR. FISHER'S Education Bill (No. 2) was read a second time in the House of Commons on March 18th. Mr. Peto's motion for the rejection of the Bill, on the ground that the present Parliament had no mandate to deal with the question, and that the Bill would abolish parental authority over children up to the age of eighteen, was negatived without a division. The second-reading debate indicated several directions in which there is likely to be much discussion in Committee, but on the whole the outlook is hopeful so far as the passage into law of the chief provisions of the Bill is concerned. As Mr. Fisher said in his speech during the debate, if the Bill passes into law, the whole spirit and outlook of our elementary schools will be changed for the better. The Bill asserts the principle of the rights of youth. Its object is to provide the greatest possible number of outlets for talents of all descriptions, and education authorities will be compelled to provide secondary education for all children who are fit to receive it. The essential proposals of the Bill involve an eventual expenditure from rates and taxes of about £9,000,000; and if nursery schools are established, another £900,000 will be required.

THE Board of Education's Circular 1,032, dated February 28th, 1918, announces a further "combing out" of teachers, educational officials, and college students. Under Circular 983, which is now superseded, such persons might, within certain age limits, claim protection from the Board of Education, provided they were placed in a medical category below 51. The new order provides that those teachers in public educational institutions and those educational officials who had not attained the age of twenty-five on February 25th, 1917, and all full-time students, will, if on their last medical examination they were classified in categories B1 or C1 (or in Grade II.), be called to the colours, or, if classified in lower categories, will be called upon to present themselves for medical examination, and, if they are then classified in Grade II., will be called to the colours. The usual right of appeal to a local tribunal will be allowed. The effect of the changes is that the only persons who can future receive protection are: (1) full-time students classified in Grade III., and (2) teachers and educational officials who are classified in categories B2, B3, C2, or C3 (or Grade III.), or, if classified in categories B1 or C1 (or Grade II.), had attained the age of twenty-five on February 25th, 1917.

THE Board of Education announces that the following examinations have been recognised for the calendar years 1918 and 1919 as approved examinations, under their scheme for the better organisation of examinations in secondary schools:—

As First Examinations:—(1) The School Certificate Examination of the Oxford and Cambridge Schools Examination Board; (2) the Senior Local Examination of the Oxford Delegacy for Local Examinations; (3) the Senior Local Examination of the Cambridge Local Examinations and Lectures Syndicate; (4) the School Certificate Examination of the University of Bristol; (5) the First School Certificate Examination of the

University of Durham; (6) the General School Examination of the University of London; (7) the School Certificate Examination of the Northern Universities Joint Matriculation Board.

As Second Examinations:—(8) The Higher Certificate Examination of the Oxford and Cambridge Schools Examination Board; (9) The Higher School Certificate Examination of the Oxford Delegacy for Local Examinations; (10) the Higher School Certificate Examination of the Cambridge Local Examinations and Lectures Syndicate; (11) the Higher School Certificate Examination of the University of Bristol (a); (12) the Higher Certificate Examination of the University of Durham; (13) the Higher School Certificate Examination of the University of London (a); (14) the Higher Certificate Examination of the Northern Universities Joint Matriculation Board. The examinations marked (a) will be held for the first time in 1919.

The Board will accordingly pay to each school on the grant list an additional grant not exceeding £2 on each pupil entered for any of the above-named examinations held during the years 1918 and 1919.

FOR the past five years Cambridge has been considering the alteration of the entrance examination to the University, and all secondary-school masters will read with interest the report just published by the Syndicate, which has been inquiring into the matter, for it is a question of vital concern to them. On the whole, they ought to be well pleased with the proposed changes; the examination is to be brought into line with the newly constituted school certificate examinations, and exemption from it is to be granted on the basis of such certificates. Greek is no longer to be a compulsory subject, and thus that nightmare of science boys is at last to be done away with. Such a reform has been long overdue. For ourselves we never could understand the attitude of those classicists who opposed the "abolition of compulsory Greek" on the ground that it would mean the decline of Greek studies at the universities. Both the members of the present Syndicate and those responsible for a previous report last year have been more enlightened; the latest report quotes with approval from the earlier one: "The Syndicate attach a high value to the study of Greek in the general system of secondary education, and earnestly desire that it shall continue as a medium of intellectual development, but they cannot recommend that Greek should continue to be a compulsory subject in the Previous Examination." The reconstituted examination is to have three parts (which may be taken separately):—(1) Languages—*i.e.* Latin + another; (2) mathematics (two papers) and natural science (four papers), of which a candidate must take one of the mathematical papers and two of the others; (3) English subjects. It will be noted as a sign of the times that science bulks largely, a result, as the report says, of "views now generally held on the importance of natural science as a part of a liberal education." The conditions for exemptions (by school certificates) seem eminently fair and have been carefully drawn up.

A VERY important report was published in the *Cambridge University Reporter* for March 5th from the Special Board for Classics which has been considering

the reorganisation of both parts of the Classical Tripos. This is not a subject which immediately concerns secondary-school masters in the routine of their daily work; but it is of paramount importance to all such who can look beyond the classroom, and have a care for the advanced education for which it is their business to prepare their pupils. Details will not concern them, but the spirit of the proposed changes does; and we are glad to be able to say that is wide and humane. The reformers "desire to encourage the wide and accurate reading of classical literature, and at the same time to ensure, so far as possible, that the authors shall be read with literary appreciation, with knowledge of their subject-matter, and with some reference to the bearing of their contents on modern thought." Hence an added importance is given to "comment" or "translation with comment" in the papers in part i. (which is no longer to qualify for a degree, and is to be taken not later than the end of the second year of residence, and not earlier than the end of the first year). Alternative papers may be taken in lieu of verse composition, though a lower *maximum* of marks is allotted to them, and this is perhaps as it should be—we cannot all be poets, but we recognise the gift as *θεῖον τι*! Part ii. (the degree examination) is to be the real classical examination—like *Greats* at Oxford—and is to include, as it should, a *viva voce* examination.

THE Board of Education has made preliminary arrangements for short courses for teachers in secondary schools to be held next August as follows:—*English*, at Cambridge (Women's Training College) and Oxford (St. Hugh's); *History*, at Eton College and a centre in the North of England; *Geography*, at Aberystwyth (University College of Wales); *French*, at London (Bedford College) and Durham; *Latin*, at a centre to be determined later; *Mathematics*, at London and a centre in the North; *Botany*, at Leeds; *Voice Training*, at Bristol. Details of the various courses will be circulated to all secondary schools recognised by the Board, probably before the end of April, and directions as to the manner of application for admission will be given. It is possible that one or two additional courses may be arranged.

THE Salaries Report of the London Education Committee, to which we referred in our last issue, has been subjected to very severe criticism during the intervening weeks, and has in consequence been sent back to the committee by the Council. The scale proposed, regarded simply as a scale, is not seriously objected to, except in so far as it accentuates, at a time when women are doing signal service for education, the existing differences between the pay of men and of women. The fact of such differences is, of course, a very large question, fraught with social issues that go far beyond the controversies of the moment. But what all teachers alike complain of is that they are offered a *future* benefit to meet a *present* need. What is the use, they ask, of telling a man, whose salary has only three-fifths of the purchasing power that it had before the war, that he shall get a larger salary ten or fifteen years hence than he expected to get? The commuta-

tion of a war bonus for a future increment does not help him. Then take the case of a woman assistant. The substitution of a £7 for a £4 increment looks excellent, especially when one is told that three increments, amounting to £21, are to be added on April 1st. The other side of the story is that she gives up a war bonus of £20 16s., fixed by an impartial arbitrator, after careful consideration of existing conditions; so that on the whole she stands to gain the princely sum of 4s. per annum by the committee's scheme. No wonder she rebels, and no wonder teachers are asking what was the real object of the "Fisher grant."

PAMPHLET literature connected with the Education Bill is naturally rather abundant just now. We are glad to see that the Oxford Press has issued a shilling reprint of several of Mr. Fisher's speeches, beginning with his memorable utterances in Parliament in April and August last, and ending with his recent address to the Training College Association. Mr. Fisher contributes a preface in which his proposals are eloquently defended. The Workers' Educational Association's pamphlet entitled "The Choice Before the Nation" is a timely text-book for those who, whether in or out of Parliament, wish to see the Bill strengthened in its passage through the anticipated Committee stage. The association's views regarding the age of exemption, the employment of children, secondary-school fees, the hours of continued education, the size of classes, compulsory medical treatment, the distribution of cost between the central and the local authorities, and the representation of teachers and workers on education committees, are well known by this time, and are concisely set forth in the pamphlet. A "Memorandum of the Results of an Inquiry made by Inspectors of the Board of Education in an Urban District," issued by H.M. Stationery Office at a penny, throws a lurid incidental light on the necessity for the employment clauses of the Bill. The extent to which children are employed at unseasonable hours in undesirable occupations is shockingly exemplified in this pamphlet. It is not the manufacturing industries only which, in the expressive language of the W.E.A., have "a vested interest in ignorance."

THE annual general meeting of the Association of Technical Institutions was held on February 22nd and 23rd at the Drapers' Hall, London. Among the resolutions passed by the association those dealing with pensions and with salaries may be mentioned. In the case of pensions it was resolved: (a) That this association welcomes the announcement that the Government intends shortly to introduce legislation providing for a National Pension Scheme for Teachers in Secondary Schools and other institutions connected with higher education, to be based upon the recommendations of the Departmental Committee on the Superannuation of Teachers, issued in 1914. (b) That this association would like to see modifications in the scheme proposed in the following directions:—(i) A more adequate breakdown allowance, especially where a breakdown occurs in an early stage of the teacher's career; (ii) optional retirement, with a due proportion of the

Government pension payable at sixty-five : for men at sixty or after; and for women at fifty-five or after; the insurance benefits contemplated in the report of the Departmental Committee to mature in the case of women at fifty-five, and in the case of men at sixty; (ii) the superannuation for teachers for years of service prior to the passing of the proposed Act to be augmented from a fund created by the State setting aside an amount equivalent to what the State would have contributed, with interest, if the proposed scheme had been in existence for the period of the teacher's recorded service; (iv) the extension of the scheme to part-time teachers whose services are retained by payment of a definite annual salary for a portion of their time. The scheme to apply only to the proportion of the salary which is paid by the education authority.

THE resolutions dealing with salaries were as follows:—That this association urges in the interest of technical education (a) that scales of salary providing for adequate increases and reasonable prospects should be adopted for all fully qualified full-time teachers; (b) that the system shall be national, and that experience and length of service of a teacher under any one authority shall count equally if a teacher is transferred to another authority; (c) that the scales of salary for heads of departments should be such that a man of ability may feel that his future position, if he becomes a teacher in a technical institution, will compare favourably with what he might reasonably have expected to obtain in an industrial career; (d) that the Government be requested to make a grant to technical-school teachers as it has done in the case of primary and secondary-school teachers; (e) that in the interest of efficiency, education authorities should be able to vary the scales of salary to heads of departments in such way that those departments or institutions which are doing the most important work and have the largest number of students may be able to command the services of the most able and distinguished men.

In view of the many complaints made in the police courts and elsewhere regarding the prevailing lack of discipline among the younger classes of the community, the Duty and Discipline Movement, of 117 Victoria Street, Westminster, S.W.1, has started a Parents' Branch and a Children's Branch. Parents and children joining these new branches are not required to become full members of the Duty and Discipline Movement, but the parents will have to sign a card undertaking to carry out the principles of duty and discipline as regards their children, and children will sign a similar card promising to do their best to be dutiful and obedient and to do nothing that may do harm to their country. There is to be no subscription payable by parents or children joining the new branches, beyond the initial charge of one penny for the card. It is hoped by the movement that schoolmasters and schoolmistresses throughout the country will take up this new activity and act as local honorary secretaries.

ENGLISH teachers who wish to find French correspondents for themselves or their pupils may do so by applying to Miss Williams, the International Guild,

6 rue de la Sorbonne, Paris (V<sup>e</sup>), who will take the necessary steps for putting them in connection with French schools. To save correspondence, teachers should state the grade of their school and the age and sex of their pupils.

THE annual report of University College, London, shows that in normal times the total number of students, day and evening, amounts to about 2,200, while the number last session was 1,240. This number included 121 members of H.M. Naval and Military Forces, for whom special courses were provided, and 159 who attended special vacation courses, so that the actual number of ordinary students was 960, of whom 547 were women. The normal fee revenue amounts to between £29,000 and £30,000 a year, but the fee revenue last year was only £14,000. Economies of every kind have been introduced, and all expenditure possible has been deferred. It is anticipated that, unless further help from the Treasury is forthcoming, there will be a deficit at the end of the current session of nearly £9,000 on the college establishment account. While the ordinary activities of the college have been maintained to meet the needs of the students actually in attendance, all available energies have been directed towards war purposes, of which the report gives a short account, but obviously details must be held over until the end of the war. Among the developments of the year may be noted the admission of women to the faculty of medical sciences, the reorganisation of the department of Italian, the institution of a department of Scandinavian studies, and a movement for the institution of a department of Dutch studies. The *pro patria* list includes about 2,500 names of past and present members of the college who are taking an active part in one or other of the Services connected with the war. Of these no fewer than 195 have already fallen.

THE Manchester School of Technology has recognised that many of its undergraduates, after completing their course of training by adding practical works experience to academic studies, will, before long, occupy positions as managers. However versed a man may be in technical knowledge, and whatever acumen for research he may possess, he is not necessarily qualified for a managerial position. Short courses of lectures on management, on costing, and on economics have therefore formed part of the university courses taken by candidates for the degree of B.Sc.Tech., whether in engineering, applied chemistry, or textile technology. The science and practice of works management ought to be studied by the works manager of the future as an essential element of his university training; and he should be given the amplest opportunities of acquainting himself with this new science as it continues to develop and to be practised in the industries of this country. With this end in view a group of large firms engaged in the principal industries of the Manchester district have offered to the governing body of the School of Technology the sum of £3,000, spread over a period of five years, towards the cost of establishing a new department of industrial management. It is proposed that a lecturer shall be appointed for this period at a salary of £600 per annum to

conduct research in the subject of industrial management, to organise a new department, to lecture to members of the University and to the public, and to assist industrial concerns in the solution of management problems. A number of managers, directors, scientific experts, and others who have had special experience or are responsible for important innovations will be invited to deliver public lectures to encourage enterprise and experiment in matters connected with management. The suggestion marks a breach with the past secretive tendency of private business—concealing all discoveries—and adopts instead the practice of the man of science of making known.

THE Simplified Spelling Society directs our attention to the fact that more than 54 per cent. of the 826 universities, colleges, and normal schools enumerated in the "Educational Directory," issued by the U.S. Bureau of Education, and seven institutions not named permit students to use simplified spellings. The number of institutions using simplified spellings in official publications and correspondence has increased from 146 to 172 in the last twelve months. Only twenty-two were recorded three years ago. Marked progress has been made by newspapers and periodicals using at least twelve simpler spellings or the simpler alternative dictionary spellings.

MR. ROBERT PEACOCK, Chief Constable of Manchester, in an article on "Juvenile Delinquency" in the *Child* for March, reports an increase in the number of juvenile offenders since the outbreak of war. He distinguishes between two kinds of offenders, those who are merely mischievous and high-spirited and get into trouble owing to the lack of parental supervision and those who commit serious offences. Among the latter the boys work in organised bands and consider it an honour to have been before "the beak." Mr. Peacock urges that the cinema has come to stay, and that, therefore, educational and other authorities should arrange to give suitable exhibitions and thereby supplant the usual "pictures" frequented by the children. He suggests that the present juvenile courts fail because they do not treat children as children, and apply judicial procedure and language to immature, non-understanding delinquents; consequently, a specially selected body, consisting of clergymen, schoolmasters, local police officials, and social workers, should be established to try childish offenders.

AN account of life on the *Mars*, one of the Home Office training ships, situated in the Tay, opposite Dundee, 300 yards from the Fife shore, is contained in the *Child* for February. The boys collect about 5 cwt. of vegetables and send them to the Grand Fleet in crates, which they themselves make. The boys receive a general training, and special attention is paid to manual work, and the author, Captain-Superintendent A. L. Scott, suggests that nautical continuation classes should be established in all the schools in the country in order that every stay-at-home man should know as much of sea matters as would enable him to appreciate the work of those who hold the narrow seas.

#### SCOTTISH.

THE ordinances governing entrance to the Scottish universities have been under consideration for several years past, but it seemed impossible to arrive at any common agreement in regard to them. Last year provisions were submitted, by a majority vote, to the Privy Council for approval, but so much opposition was raised by teachers and others that the Privy Council refused to pass them, and remitted them back for further consideration. Representatives of the university courts then met Lord Haldane, chairman of the Universities Committee of the Privy Council, and after a series of meetings finally arrived at a concordat which, in the words of Prof. Burnet, "provides a charter of liberty both for universities and schools." The essential feature in the new agreement is that the universities and the Education Department will accept a pupil's school leaving certificate, "based on the observation of his teachers during a full course of studies," as a sufficient guarantee of a liberal education and of maturity for transference to a higher institution. The new revolution—for it is nothing else—has come almost without observation. At the very time when England is preparing to establish and endow a system of external examinations for her higher schools, Scotland sweeps externalism from her schools, and accepts the teachers' opinion as the determining factor in assessing the merits of pupils. Great responsibility is thus placed upon Scottish teachers, but there is no question of their failing to respond to it.

THE Scottish School Boards Association, by seventy votes to fifty-seven, has decided to oppose the raising of the school age to fifteen, as proposed in the new Education Bill. It is surely a strange irony that the very body which might be expected to give whole-hearted support to such a proposal has been the first to rush in and condemn it. It is safe to assume that the majority of these members will take good care that the education of their own children will extend beyond the modest limits suggested in the Bill. The only other voice that has been raised against this clause is that of the farmers. They declare that the raising of the age will spell ruin to farming. But they have said that of every proposal for reform from time immemorial. They have cried "Wolf!" so often that now no one heeds them. It is high time farmers were giving up their *non possumus* attitude. They ought now to understand that no industry would gain more from intelligent, well-educated labour than farming, and that no industry would gain more from intelligent direction than farming.

AN extraordinary situation has arisen in Ayr, where the local School Board, by six votes to three, has resolved to dismiss Mr. Alex Emslie, the rector of the Academy, and to pay his salary in full until June, in order that his dismissal may take place at once. The speeches made in moving and seconding the resolution resembled the preliminaries to an increase of salary rather than a dismissal. Mr. Emslie was a distinguished scholar, an exceptionally efficient teacher, and an able organiser, but—"But" is as a gaoler to bring forth some monstrous malefactor," the "male-

actor" in this case being apparently Mr. Emslie for want of subserviency to the School Board. Mr. Emslie actually thought he knew better how to manage his school than the popularly elected members. He was verbearing, arrogant, autocratic, and did not "wait upon his 'masters' with bated breath and whispering umbleness." Therefore he must go. The teachers of Scotland have taken up the challenge thus thrown down, and are prepared to take the most extreme steps, including the calling out of all the teachers in Ayr, if the whole case is not submitted to arbitration.

THE proposal in the new Education Bill to include voluntary schools in the national system proved more than anything else the sincerity and courage of its author, the Secretary for Scotland. He must have known that this was a prickly subject that had in the past injured many reputations and brought to naught many well-intentioned efforts. But having once satisfied himself that this provision was urgently necessary in the interests of the children in these schools, he has very clearly indicated his determination to be satisfied with nothing short of the full reform. At present something like one-seventh of the children of Scotland are being educated in voluntary schools under conditions which, to say the least, do not afford them their birthright of equal opportunity. The new Bill offers fair and reasonable terms for putting an end to these conditions, while at the same time having due regard to the rights of the parents to have a say in the religious upbringing of their children. It is to be hoped that no ancient prejudices and old-time battle cries will on this occasion be allowed to stand in the way of a successful issue.

A SCHEME of co-operation has just been completed between Edinburgh University and the Heriot-Watt College. This scheme is full of promise for the further development of both bodies, and for the advancement of technical study in the East of Scotland. The college is not to be merged in the University, but joint courses for degrees are established, and academic status is given to large portions of the college teaching. The Heriot trust is to contribute £5,000 per annum towards the maintenance of the college, and £800 for bursaries, while the University will contribute towards capital and current expenditure. A new governing body is to be constituted representative of the University, the Heriot trust, the School Board, employers, and workmen.

THE sixteenth annual report of the Carnegie Trust for the Universities has just been issued. The war has greatly affected its operations, as all the building schemes have had to be suspended. The research work, however, has been prosecuted vigorously, though mostly directed to problems arising from the war. During the year £5,500 has been expended on this department, and the trustees are satisfied that much additional work of the highest value has been accomplished. The trustees fully recognise the financial losses suffered by the universities through the reduction of fees, and indicate that they will be prepared when their full extent is finally known to make material contributions to their liquidation. Repayment of

fees by former beneficiaries of the trust has been made to the amount of £1,300 this year, a sum more than double that of any previous year except 1914-15.

#### IRISH.

TWO events of the first importance for secondary education in Ireland have occurred during the past month. Both took place in the first week. The Lord Lieutenant expressed his approval of the rules framed by the Registration Council for a Register of Intermediate Teachers in Ireland, and the House of Commons, after an interesting debate, passed the new vote of £50,000 for intermediate education. These two steps, marking a distinct step forward in intermediate education, are closely connected. The new grant of £50,000 is to be distributed according to prescribed rules, one of which deals with the qualifications of the teachers employed in schools, and states that they must be recognised by the Intermediate Board. This may certainly be taken to mean that the teachers recognised will have to comply with the rules of the register. The register itself will now come into operation almost immediately, and before the summer is over no doubt most of the teachers in Irish intermediate schools who desire to do so will become registered. Registration is made fairly easy for existing teachers, the rules becoming more stringent and fixing a high professional standard when the probationary period has elapsed.

IN the debate on the £50,000 grant, the case of the lay teacher was fully represented, and the Government expressed the hope that he would be greatly benefited by it. The lay teacher, disappointed in many instances by what he has received from the Birrell grant, is not at all satisfied that the rules for the new grant will secure him his due share in it, and it is by no means agreed in what way the new rules will really work out. The Government, however, states that they are only provisional, and may be amended from time to time. Two points of importance—they may almost be called concessions—emerged during the debate. In the first place, although everyone deprecated measuring grants for Irish education by equivalent grants based upon the proportion of 9 to 80 of moneys granted by the Treasury to English education, and it was generally admitted that Irish education should receive what was due to it by its own requirements and not according to the requirements of England and Wales, yet it was agreed that, so long as the present arrangement holds, if the Treasury grants to English secondary education should increase (as doubtless they will), then the Irish equivalent grant should not remain fixed at £50,000, but should increase proportionately. This is a concession of importance. It has long been claimed in Ireland, but never previously admitted by the Treasury, and there has resulted a sense of injustice.

IN the second place the Government has promised that a committee shall be appointed at once to inquire into the question of teachers' salaries in Irish intermediate schools. A similar committee has been promised for primary education, and there was some inclination to refer the interests of both classes of

teachers to the one committee. Fortunately, it was decided not to do so, but to have a special committee appointed *ad hoc* for intermediate teachers, and it was thought that it would be able to reach a decision in a short time. Such a committee is absolutely essential in Ireland, all the more when the whole question of salaries is being reconsidered everywhere in England. It is here that registration will give intermediate teachers a strong lever. Registration will be a failure unless it can secure a steady influx of well-qualified men and women prepared to devote their lives to education; and, however altruistic teachers may be, the labourer is worthy of his hire, and must be attracted by the hope of a reasonable salary. Moreover, the interests of the country require that its secondary education should be raised to the highest possible plane, and this can be secured only by attracting to it the best and most cultured brains. The expert opinion of teachers will then be able to assert its claim to consideration in discussing and working out all kinds of problems in education.

ONE of these problems was the subject of the address given by Prof. McClelland at the annual meeting of the Central Association of Irish Schoolmistresses in Alexandra College, Dublin, on March 1st. He spoke on "The Place of Science in Education," and although an interesting discussion took place, it is noteworthy that only one of the speakers was engaged in school teaching, and that one, although a headmaster and sympathetic with the needs of science, was not a teacher of science. The claims of specialists to have their subjects taught in school can, in the long run, be satisfactorily determined, if not solely by teachers, yet only in connection with their expert knowledge.

THE Classical Association of Ireland added an extra meeting to its ordinary series of four winter lectures, when, on March 13th a lecture was read which had been sent by Prof. B. P. Grenfell, of Queen's College, Oxford, on "New Papyri from Oxyrhynchus."

THE Department has issued its programme of summer courses of instruction for teachers for the present year. The number and variety of the courses are a good index of the nature and extent of its work, which is having such a widespread and beneficial influence on the life of the country, and will be so urgently required after the war. The proposed courses are seventeen in all, and are as follows:—(1) Chemistry of engineering materials; (2) economics of grocery commodities; (3) commercial arithmetic and economic geography; (4) furniture design; (5) cabinet-making; (6) painted furniture-making; (7) technology for teachers of introductory English and mathematics in technical schools; (8) lettering and illumination; (9) ornamental leather work; (10) advanced housewifery; (11) advanced dressmaking; (12) hygiene and sick nursing; (13) experimental science; (14) drawing; (15) manual training (woodwork); (16) domestic economy; and (17) rural science (including school gardening). Teachers wishing to participate in these courses should apply to the Department. All of them will be held in July except the last, which begins on August 6th.

### WELSH.

THE representation of the University of Wales under the new Reform Act, to give it its popular title, is arousing considerable interest, especially in view of the novelty of the voting qualification, which is by no means universally understood as yet. All graduates who have attained the age of twenty-one if men, or of thirty if women, are entitled to a vote, in addition to any other vote that they may have by right of residence in an ordinary—*i.e.* non-university—constituency. Membership of the Guild of Graduates is not necessary, but those who graduated before the passing of the Act are entitled to be registered as voters only on payment of a fee to be fixed by the University, and not to exceed £1. The University does not as yet appear to have decided on the amount, but it is difficult to see why any such charge should be made at all, and last year's graduate be made to pay for a privilege which this year's graduate receives free of expense.

In an address to the Old Students' Associations of the three constituent colleges, Principal Griffiths urged that a member should be selected on non-party grounds lest party politicians should be tempted to take away again the representation they had given. We may say more than this: surely the member should be chosen for his knowledge of all matters educational, from the elementary school to the university, and for his enthusiasm and power in the furthering of their claims. He should belong not merely to the university, but also to Welsh education, and teachers who are graduates should realise the opportunity and the responsibility that now fall to them.

THE following gentlemen have been unofficially suggested as suitable candidates:—Sir Henry Jones, professor of philosophy in Glasgow University; Mr. R. Silyn Roberts, of the Welsh Appointments Board; Mr. Llewelyn Williams, K.C., M.P., Recorder of Cardiff; the Rev. F. W. Phillips, of Walton, Liverpool, a writer of verse, who has already contested the Gower constituency; Mr. I. Myrddin Evans, secretary to the Central Welsh Board; Mr. F. Llewellyn Jones, solicitor, of Mold, who purposed to stand as a Labour candidate, and has already served on the Court of the University and on that of Aberystwyth College; Sir John Morris Jones, who is regarded as the greatest living authority on Welsh literature; and Prof. Joseph Jones, a most persuasive speaker, who holds the chair of Greek Testament and literature in Brecon Memorial College. Which of these would be the best friend to Welsh education?

THE appointment of a successor to Principal Griffiths has been deferred until after consideration of the report of the University Commission, which has just been published. If all the requirements with regard to the qualities of his successor that have appeared in the local papers are realised, Principal Griffiths may well feel in his retirement at Cambridge that he has left behind him a college to whose postal address might be appended the direction applied by the old Bangor worthy to the rival town of Carnarvon: "Ynagosi'r nefos nadnesaf."

SIR HENRY HADOW, principal of Armstrong College, Newcastle, lecturing on "Music in the Life of the Community" at Cardiff University College, paid a warm tribute to the natural spring of musical appreciation, talent, and ability existing in the Principality, which he had not seen surpassed anywhere; at the same time he commented on the backwardness of Wales in instrumental music, and said that much had yet to be learnt in the direction of musical discretion, high ideals, and patient effort.

SOUTH WALES is likely to give practical effect to the Government suggestions as to the co-operation of domestic subjects teachers in the food campaign. A short course for teachers was recently held at Tony-pandy, and Swansea Education Committee has decided to look favourably on any request for the help of its teachers. Teachers have already done a large amount of work in connection with the issue of food cards.

THE list of presidents at the National Eisteddfod to be held in August at Neath has been issued. Mr. Lloyd George will preside on the third day, and be present at the chairing of the bard; he is also to be present at the singing festival, which concludes the Eisteddfod, on the fourth day. Other presidents will be Mr. Herbert Lewis, Sir Henry Jones, Lord Treowen, even yet better known as Sir Ivor Herbert, Sir O. M. Edwards, and Mr. T. J. Williams. Mr. Alderman Hopkin Morgan, the mayor of the town, will preside at the Welsh concert, Mr. J. E. Moore-Gwyn at the "Dream of Gerontius," Mr. Alderman Ben Jones, Mayor of Swansea, at the miscellaneous concert, and Mr. Alderman H. P. Charles, chairman of the General Committee of the Eisteddfod, at the "Messiah."

MR. J. E. EDMUNDS, the teacher whose exclusion from the Library Committee at Cardiff was attributed to his activities as secretary of the Trades and Labour Council, has been nominated by the local branch of the Independent Labour Party to contest one of the three new seats in Parliament assigned to the city.

### MEDIEVAL ENGLAND.

*Social Life in Britain from the Conquest to the Reformation.* Compiled by G. G. Coulton. xvi+540 pp. (Cambridge University Press.) 15s. net.

THOSE who have revelled in that marvellous store of good things which Mr. G. G. Coulton has culled from the literature of the Middle Ages and collected in the pages of his "Mediæval Garner" will turn with keen anticipation to this new volume, wherein he does for England in particular that which in the earlier work he did for Christendom in general. They will not be disappointed. Here in this book on "Social Life in Britain" they will find 290 extracts from original sources which reveal in vivid outline and adequate detail every important aspect of the bygone world of the later Middle Ages wherein our ancestors moved and had their being. There could be no more delightful or satisfactory a way of penetrating to the heart of those days so different from our own, and of attaining to an understanding of those modes of thought so alien from those of the present day. As we read, we realise—as no amount of descriptive writ-

ing could enable us to realise—that the men of the Middle Ages were in spirit children, immature, credulous, cruel, immoral, and yet immeasurably delightful and with infinite possibilities of development before them. The essays taken from Trevisa's "Bartholomew" on the cat (p. 371) and the crocodile (p. 531) are just such as a precocious babe might write to-day. The latter reminds one of the German Emperor mourning over the fate of Louvain. "If the cocodril findeth a man by the brim of the water or by the cliffe, he slayeth hym if he may, and then he wepeth upon him, and swoloweth hym at the laste."

The excerpts which Mr. Coulton has brought together are obviously the fruit of wide reading in medieval authors and of long study of vanished social conditions. They are grouped under fifteen main headings. First, the land and folk are described. We learn, for example, from a Venetian envoy of A.D. 1500 that "the English are great lovers of themselves and of everything belonging to them," also that "they think that there are no other men than themselves and no other world but England." The second section, dealing with birth and nurture, gives a most interesting glimpse of the educational ideas and scholastic systems current in the days immediately preceding the Renaissance. They were hard days, both for teachers and taught. The teachers were despised and underpaid. The taught were bored by incessant Latin grammar and terrorised by remorseless punishments. One particularly vicious feature of medieval schools and universities was the espionage and tale-telling which were inculcated by the authorities as duties. The third section relates the toils and woes of authors, scribes, and readers in those times when printing was unknown.

The next portion of the book—properly a long one—deals with the Church and Churchmen. Never had religion so much power as it had during the Middle Ages. The bull *Unam Sanctam* (p. 190) reveals papal claims at their highest point. The Church, however, in the fourteenth century, was decadent, and many extracts here given bear witness to that fact. Perhaps, indeed, Mr. Coulton's selection over-emphasises the corruption of pre-Reformation Christendom; for even in those dark days there was an elect of children of the Light. Nevertheless, such a story as that of the fight which Archbishop Boniface of Canterbury had with the Sub-Prior of St. Bartholomew (p. 211) reveals an unfathomable depth of degradation. Later sections, of progressively diminishing length, deal with Court life, camp life, manorial organisation, municipal development, domestic manners, sports and pastimes, travel, art, science, witchcraft, etc. Taken altogether, they provide an invaluable body of first-hand material on which a secure judgment of the later Middle Ages can be based.

F. J. C. HEARNSHAW.

### EDUCATION FOR ENGINEERING.

*The Education of Engineers.* By Herbert G. Taylor. vii+64 pp. (Bell.) 2s. net.

THE main burden of this little book, as we are told in the preface, is to show that engineers are not educated in the sense that education means that higher perception which enables a man to gauge his own power, and constrains him to direct that power to the ultimate benefit of his fellows. Three of the five chapters deal with such schemes of education as are in vogue in this country, and the author asserts that they show that the university schemes count for naught. "The engineering departments of our universities are completely severed

from the live and active engineering of everyday life; co-operation between the two has never taken place; the universities are harbouring a corpse, which stands between the universities and the affairs of our common life, over which they have so little control." It may be mentioned here that the author is a lecturer in the Engineering Department of King's College, University of London, and that he will probably find a good many people, both in colleges and in works, who do not agree with the above sweeping statements, and will ascribe them to the author's lack of full knowledge of what has been and is now being done in various parts of the country.

We note with interest that the author considers that "the best education for an engineer is found in the natural and instructive pursuit of manual toil accompanied by study at a technical school." This is the case of the young man who serves an apprenticeship and attends evening courses, or part-time day courses on two or three afternoons each week. Mr. Taylor will find many who agree with him on this matter, and he might have added that one of the most valuable points in the London University scheme is that its engineering degrees are open to "internal" evening students. Those students who obtain degrees in this way spend a much longer time in pursuing their courses of study, and are men of wide practical experience when their degrees are attained. They are thus eminently worthy to be designated engineers. The total number of students so qualifying has been comparatively small up to the present, but the quality has been admirable. With a saner type of matriculation examination, many more students would have graduated in this way. The rearrangement of the various school-leaving examinations should add considerably to the ranks of London University evening students, unless the University is ill-advised enough to suppress this part of its activities.

We have read the book with interest; it will probably provoke some discussion, but we lay the volume down with the feeling that the author has damaged his case by exaggeration, and that it would have been well to have postponed its production until his experience had become somewhat wider.

## PHYSICS AND ITS APPLICATIONS.

*A Text Book of Physics for the Use of Students of Science and Engineering.* By J. Duncan and S. G. Starling. xxxiii + 1081 pp. (Macmillan.) 15s. Also issued in parts: *Dynamics*, 5s.; *Heat, Light, and Sound*, 6s.; *Magnetism and Electricity*, 4s.; *Heat*, 3s. 6d.; *Light and Sound*, 3s. 6d.

ALTHOUGH the number of text-books dealing with the general principles of physics is already large, there is room for an up-to-date work such as that given us by Messrs. Duncan and Starling. The combination of the practical engineer and the experienced teacher has proved, in this case, particularly fortunate. Mr. J. Duncan is the author of several books dealing with applied mechanics and heat engines, whilst Mr. Starling has written a very useful text-book on electricity and magnetism. The result is that the present volume is neither purely theoretical on one hand, nor entirely utilitarian on the other. Although it is intended primarily for students, such as those preparing for an Intermediate examination, it may be recommended to the large and increasing class of persons who desire to become familiar with the main principles of physical science and with the applications of those principles in commerce and industry, and also in everyday life.

It is, we venture to think, a happy omen that such a book should be published in the course of the war,

having regard to the extent that the country has suffered in the past for lack of scientific training, and to the absolute necessity for employing scientific methods in industry after the war is over. The authors are to be congratulated on the attempt they have made to "connect more intimately than has hitherto been usual the scientific aspects of physics with its modern practical applications." In the opinion of the present reviewer they have succeeded in a marked degree in thus combining the outlooks of the man of science and the engineer. For the teacher their success will prove specially helpful. Very few students in the early stages of their scientific work are interested in principles or pure theory. Their attention must be captured by some important practical application of the theory, or by the novelty of some experimental illustration. It is perhaps too much to say that every schoolboy is a potential engineer; but there must be very few boys who have not some inclination towards "things that work," and amongst these are many who may, with encouragement, seek to find out "how things work."

One feature of the book that requires special commendation is the stress laid on dynamical principles and their experimental treatment. The authors rightly emphasise the fact that the neglect of experimental work in mechanics makes it difficult for a student to secure a thorough and systematic knowledge of physical science. This neglect is very marked in most girls' schools, with the result that women students are severely handicapped when commencing a university course in medicine or in science.

Without detracting seriously from the great value of the text-book a few minor criticisms may be made. It is to be regretted that a short paragraph was not introduced into chap. xvi. dealing with the angular simple harmonic motion of a body oscillating about an axis. This is of more importance to the physicist than the conical pendulum to which three pages are devoted; it is, for example, required later (p. 78) in dealing with the vibration of a suspended magnet. On p. 71 the name of the Cambridge mathematician Atwood is given three times as Attwood. Lind's apparatus for liquefying air is described in detail, but the name of Hampson is never mentioned.

Each chapter is concluded with a number of exercises for the student, and answers have been supplied to the numerical questions. The work is illustrated in the most liberal way, and produced in the manner we have been led to expect from its publishers.

H. S. ALLEN.

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*Rapid Method of Simplified French Conversation.* By V. F. Hibberd. viii + 192 pp. (Pitman.) 2s. 6d.—A very concise "grammatical introduction" is prefixed; the rules are not always well expressed. The early lessons consist largely of questions and answers, such as any capable teacher uses in oral work. The exercises consist exclusively of questions. The subject-matter is confined to material objects in the classroom, which soon becomes monotonous. New words seem to be introduced in somewhat haphazard fashion. Later lessons contain continuous passages, but these also deal with strictly materialistic things. The treatment of grammatical features is by no means systematic. Misprints are far too common: thus, on p. 94, we find "blûant," "gonttes"; on p. 95, "plait"; on p. 96, "rez du chaussée" and "vaiseille"; on p. 97, "vive avons"; on p. 98, "Le buffet se met-elle . . .": a

117, "hebdomadaire" occurs twice, and again on 118, 119. Occasionally the French is doubtful e.g. "J'ai des cartes postales dans les mains," "En quoi est votre journal?" etc.; and the answers to the questions are not always obvious, e.g. "Quand faut-il dire un mensonge?" "Quelle est la différence entre la couleur et la beauté?" The answers supplied are sometimes a little surprising, e.g. "Que dites-vous à monsieur qui ne dit pas la vérité?" "Je dis qu'il est fou." On the whole, then, a perusal of this book has not left a favourable impression.

*Anglais sans Peine.* Par Lady Bell. 88 pp. (chette.)—The title suggests an English counterpart of the same author's "French without Tears." is, however, something entirely different. Lady Bell has been struck by the varied meaning given to certain common verbs by the addition of adverbs (up, down, etc.). She has made up short connected narratives introducing a number of these, and the idiomatic French version on the opposite page explains their meaning to the French reader. Lady Bell has a fresh and pleasant manner, and no doubt some benefit can be derived from this slender book, by the English as well as by the French student. But the title is misleading.

*Sprachbuch of Everyday German Words and Phrases.* B. Readman. 108 pp. (Blackie.) 2s. 6d. net.—This book contains about twenty-five words or phrases with their English equivalents on each right-hand page, the opposite page being intended for entries by the student. Some sections of the vocabulary are well presented, others poorly or not at all, and there seem to be scarcely any adjectives. The "selections from German poets" consist of half a dozen poems. In a book like this it should surely be possible to eliminate prints, yet we have found "von nemem," "im m," "Aussicht" (for "Ansicht"), "Zuchhaus," "Fieberber," "Himberre," "erklimmern," etc. Words ending in "in" are given plurals in "-inen," "Zange" is twice cited as a noun in the plural, "Hand" and "Bogen" are made masculine. If a book of this kind is wanted, it should have been compiled with more care and better judgment.

### Classics.

*The First Year of Greek.* By J. T. Allen. 375+ pp. (New York: The Macmillan Co.) 7s. 6d.—In this book the Greek professor of the University of California deals with the problem of the study of Greek in America, where it has come "during the last decade or so to be largely a college subject." There are at the present time about four thousand students in the United States who begin to learn Greek after entering college, and Prof. Allen states that the number is certain to increase. The majority do not continue the subject beyond two years, and many are content with but a single year. Clearly college undergraduates require a different method than schoolboys. "The student must be given the opportunity of reading in their original form choice selections of Greek literature—the finest flower and reflecting of the Greek mind. To this end all other subjects are, for the majority, subordinate." So this book offers as a solution to this problem one year's work based upon long experience, and it may be affirmed that the student who works through it will not only know the fundamentals, but also have gained insight into the meaning to the world of the Greek language. The author does not tell us what knowledge, if any, such students are supposed to have of Latin, a thorough acquaintance with which would

make possible a more rapid progress in Greek than is here contemplated, and would enable the learner to dispense with some of the elementary exercises and to hasten more rapidly to the reading of the easier Greek authors. The work consists of reading, exercises, and grammar, arranged for eighty lessons. Redundancies of accident such as the dual are dispensed with, while the reading selections are proverbs from all sources, passages from the Gospels in Greek, from Euclid, and especially from Plato. Herodotus is used for additional exercises, but no use is made of Xenophon, or the orators, or the tragedians (except for a few apophthegms). To turn to details: *λύω* is used for the paradigm of the regular verb, but although its quantities are correctly marked in the grammar, the long *ī* is repeatedly left unmarked in other places. The same applies to *ἔφη* (p. 29), *φέω* (p. 47), *κωλύω* (pp. 52, 53), *πάσσας* (p. 63), *λάθρα* (p. 73). The long *ū* in *ψευδομαρτυρώ* (p. 83) is a mistake. The philological explanations are not altogether satisfactory. The genitive singular termination of the second declension *ω* (p. 233) is not explained. The explanations of the comparative forms (p. 245) require revision, and in classifying the present stems of the thematic verbs (p. 252) the contracted stems (-*εω*, -*άω*, -*ώω*) are not mentioned. The augment in *έώρων*, *άνεψχα*, and *ένέξα* (p. 251) is also incorrectly explained. The Attic form of the pluperfect second singular was *έλελύκης*, not *έλελύκεις* (p. 263).

*Cicero: Pro Lege Manilia.* Edited by John R. King. xi+text+55 pp. of notes and vocabulary. (Clarendon Press.) 2s. 6d.—This is a handy little volume made up from Prof. Clark's Oxford text, and the introduction and notes from the editor's "Select Orations of Cicero," with the addition of a vocabulary compiled by Mr. C. E. Freeman. It is an excellent speech for schoolboys, which cannot be properly understood without a correct appreciation of the political position at Rome at the time. This is well given in the brief introduction, and the notes (whether on historical or grammatical points) are both concise and helpful. A class could not have a better exegesis than this upon the glory of the *nomen Romanum*, and we recommend all schoolmasters who like their boys to have a commentary to adopt this edition.

### English.

*The Old Country.* Edited by Ernest Rhys. 320 pp. (Dent.) 3s. 6d.—This anthology is published for the Y.M.C.A.; it contains a preface by Sir Arthur Yapp, and it is understood that when the edition is sold the publishers will hand £1,000 to the funds of the Association of the Red Triangle. These facts prepare us for an unlikeness to most anthologies, and the main question is whether the soldier boys to whom, and for whom, it has no doubt been sent in great numbers will appreciate it. There seems to be no doubt on this head; the great writers are well represented, a good deal of modern work not yet available to the general public is included, and the Red Triangle (the Y.M.C.A.) is not alarmingly in evidence. The book is Imperial; but why was not Tagore represented by "The Trumpet," the finest Imperial battle-song that the war has produced? The illustrations are all redolent of this country, the Old Country, and we all know that the editor, even with hands somewhat tied, is skilled in anthologising. Our only trifling doubt is that, notwithstanding the dainty look of it all, the price may possibly prevent the public spirit of the publisher from achieving a laudable aim.

*Longfellow Selections.* Edited by E. A. Greening. Lamborn. 80 pp. (Clarendon Press.) 1s.—Mr. Lamborn has already been thanked for other work

and now he puts his views into a preface. It is well to have chosen the poet Longfellow, whom, apparently, the critics have not entirely slain. Yet it is dangerous to hint that Longfellow preached, but Milton did not. Both preached, but in a different manner and to different audiences. Mr. Lamborn is a whole-hearted worshipper of form: will the schools accept this? The selection omits the best parts of "The Wayside Inn"; possibly they are still in copyright; but why not say so? The volume is pocketable, and will, we hope, be received in such a way that the editor may, from the stores of his enthusiasm, edit more.

*Harold.* By J. F. Waight. 127 pp. (Allen and Unwin.) 2s.—This is the third drama of Mr. Waight's trilogy. "Godwyne" was sympathetically noticed last year, and "Swegen," the second of the three, made its appearance earlier. In the present drama, which brings us to the Conquest, we still have the firm, direct writing, but there does not seem to be so much of the fire that was noticeable in "Godwyne." There are certainly fewer archaisms. The three will make excellent parallel readings to history.

*Some Nursery Rhymes of Belgium, France, and Russia.* By L. E. Walter and L. Broadwood. 42 pp. (Black.) 6s.—In this large and handsome book the Belgian songs are taken down from the lips of refugees, and a fighting artist has contributed pictures. There is a mass of material in almost every country, though we doubt if the collectors have here adhered strictly to the "nursery rhyme." It would have been well if the original versions had been printed with the English; sometimes the words are a bit heavy for the nursery. The illustrations to the French section are perhaps the best, but there is little to choose in the musical settings; they are all very satisfactory. But little ones must judge, and their rules of criticism are their own. There is a well-known Russian dodo called a Cossack lullaby, which the authors have attempted, but the refrain, which in the original forms the last line, is omitted. To an English ear it is so mysterious, and mystery counts in the nursery. Rolland's "Rimes et Jeux" might be used for additional matter in another edition.

### History.

*History: the Supreme Subject in the Instruction of the Young.* By F. J. Gould. 15 pp. (Watts.) 3d. net.—Mr. F. J. Gould, well known as an educational reformer and ethical teacher, has written a pamphlet on history as a subject of instruction which is important out of all proportion to its size. In fifteen pages he covers ground which, as he himself says, might well be utilised for the construction of a book, but he covers it in such lucid outline that the contents of the book can safely be left to be filled in by the imagination of the reader. Mr. Gould advocates a simplified and co-ordinated scheme of education in which history takes the central place. He shows how all the other school subjects—scientific, ethical, aesthetic, intellectual, practical—can be treated historically and brought within the scope of the scheme. He gives a detailed syllabus for the four periods of school life: (1) ages seven to nine; (2) ages nine to twelve; (3) ages twelve to fourteen; and—a supplementary period which he hopes will become normal for all grades of students—(4) ages fourteen to eighteen. The basis of the historical instruction in all grades is an outline, clarified and standardised, of the general history of humanity. This he would have the same for the children of all civilised countries. He would supplement it by a parallel course of national history, i.e. by "British history for British children,

American for American, and so on." The pamphlet deserves very serious consideration on the part of progressive educationists.

*An Admiral's Son and How He Founded Pennsylvania.* By E. F. O'Brien. Pp. 176. *The Man who Chose Poverty.* By J. Dykes and C. Standish. Pp. 133. (Headley.) 2s. 6d. net each.—The anonymous heroes of these two books are, of course, William Penn and St. Francis of Assisi respectively. Their stories are here briefly told from the point of view of the Society of Friends. The writers do not pretend to have made any new discoveries, or to have engaged in original research; they aim merely at presenting a clear and ordered narrative of well-ascertained facts. They have succeeded in producing attractive sketches, and the publishers have issued them in an exceedingly pleasing form. Both volumes are well illustrated, but the illustrations are one fancy pictures. Those, however, which appear in the volume dealing with St. Francis are remarkable for their delicate beauty of drawing and colour. They are from the hand of Miss Daphne Allen.

*The History Teacher's Magazine.* September-December, 1917. (McKinley Publishing Co., Philadelphia U.S.A.) 20 cents a copy.—The four parts of the *History Teacher's Magazine* now before us complete the eighth annual volume. Since America's entry into the war the magazine has contained a large number of important articles on matters connected with the causes and the issues of the great struggle. American writers constantly lift the conflict on to the ideal plane, and represent it as essentially a clash of oppugnant principles. This is well illustrated by an admirable discussion of "Democracy and War" in the December issue from the pen of Prof. J. G. Randall, of Roanoke College. The November number describes the constitution and functions of a "National Board for Historical Service," which has been spontaneously and voluntarily organised by the leading American teachers of history since the entry of their country into the war. It is a very notable movement, and it shows that the Americans are alive to the importance of the严肃 historical instruction of the people.

Among the more normal topics of the magazine three may be singled out for special mention. In the September issue Prof. D. C. Munro, in some useful "Suggestions upon Medieval History," emphasises the need that Byzantine history should receive its due share of attention. In the October number Mr. Wuesthoff gives some interesting hints for "Blackboard Work in History Teaching," while in the November part Miss H. E. Purcell describes how she has pleasantly beguiled her pupils into "Learning History by Doing"—i.e. by making models of some of the scenes depicted in the text-book.

Now that America is playing so decisive a part in European politics this magazine becomes more and more valuable to European teachers of history, for it treats of an increasingly large number of themes which they are concerned.

*History: the Quarterly Journal of the Historical Association.* Vol. ii., No. 8. January, 1918. (Macmillan.) 1s. net.—The new issue of *History* contains contributions various and valuable. Prof. C. H. Firth concludes his interesting and important study of the "Expulsion of the Long Parliament." Mr. Prevost Orton provides a most original and illuminating account of an Elizabethan prophecy, based on the legends of Merlin, that predicted woes and calamities none of which were realised by events. "A Symposium on History Examinations," by ten public-school

ters and five Oxford and Cambridge examiners, and much instruction concerning current ideas of teaching of history. The series of "Historical Discussions" which the magazine is issuing include this :—(1) Rome's foreign policy and trade interests, (2) The meaning of "protectorate." As usual, there are reviews, short notices, and letters to the editor. This number completes vol. ii.

*William Caxton.* By S. Cunningham. 191 pp. *Cardinal Wolsey.* By R. Francis. 190 pp. *Charles I.* By A. E. McKilliam. 191 pp. (Harrap.) 2s. 6d. net each.—These three volumes are numbers 25–27 in a series entitled "Heroes of all Time," which Messrs. Harrap have been publishing during the past four or five years. In one respect they differ—and differ advantageously—from their predecessors: they are printed on thicker paper, and consequently they lend themselves to more artistic and impressive binding. They are larger and more considerable books, although, as a matter of fact, they contain almost exactly the same amount of material as their forerunners. They well maintain the good reputation of the series. Miss Cunningham presents an attractive picture of the first great English printer, with the troublous times of the last kings as a background. Mr. Francis tells the popular manner the dramatic story of the rise and fall of the last of the powerful ecclesiastical statesmen of England; here the dark background against which the cardinal's scarlet stands in effective relief helps to bring out the character of Henry VIII. Mr. McKilliam, a learned and experienced biographer, writes an enthusiastic appreciation of "the White King." Each volume contains nine illustrations. The whole series would be in every school library.

### Geography.

*Philip's Strategical Maps.* (1) *Mesopotamia and Asia Minor.* (2) *Palestine, Syria, and Sinai Peninsula.* (3) *Arabia.* (4) *Central Asia.* (5) *India.* (6) *China.* (7) *Japan.* (8) *South America.* (9) *North America.* (10) *Australia.* (11) *Africa.* (12) *Europe.* (13) *South Africa.* (14) *North Africa.* (15) *Central Africa.* (16) *South America.* (17) *North America.* (18) *Central America.* (19) *South America.* (20) *North America.* (21) *Central America.* (22) *South America.* (23) *North America.* (24) *Central America.* (25) *South America.* (26) *North America.* (27) *Central America.* (28) *South America.* (29) *North America.* (30) *Central America.* (31) *South America.* (32) *North America.* (33) *Central America.* (34) *South America.* (35) *North America.* (36) *Central America.* (37) *South America.* (38) *North America.* (39) *Central America.* (40) *South America.* (41) *North America.* (42) *Central America.* (43) *South America.* (44) *North America.* (45) 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COULD you through the columns of THE SCHOOL WORLD get me the address of the inventors and publishers of the "Stars and Stripe System of School Marks"? The usual school bookseller does not know where to obtain it.

BERTRAM MOULD.

Ayshford School, Uffculme, Devon.

### The School World.

A Monthly Magazine of Educational Work and Progress.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 233.

MAY, 1918.

SIXPENCE.

**MAN-POWER AND THE SCHOOLS.**  
THE new arrangements for increasing the number of men in the Army deserve the serious attention of all who care for the welfare of education. Schoolmasters, as a class, have not sought to be excused from military service. Fully a year before the introduction of compulsion a careful inquiry by the Teachers' Registration Council revealed the fact that more than 10,000 men teachers had joined the forces. Since then the number has increased threefold, and the President of the National Union of Teachers recently stated that 30,000 members of the union are on active service. Of this large total, representing, certainly, as great a proportion of the number available as any profession or calling has supplied, many will never return to the schools. Some have found honourable graves in the far-flung battle line, others have been grievously wounded and disabled for teaching, others, again, have determined that if they survive their present perils they will seek work outside school. Meanwhile, there is before the country an Education Bill which contains proposals involving a very large addition to the teaching staff of the schools. In all, some 30,000 new teachers must be employed when the proposals are carried into full effect, and of these at least one-third should be men.

In these circumstances it is somewhat strange to find no intention of teachers in the recently published Order regarding the withdrawal of exemptions. This Order makes some attempt at discrimination as between different occupations and also as between individuals following the same occupation but holding different posts. Thus, all exemptions are cancelled for commercial travellers born since 1874 who are in Medical Grades I. and II. For clerks in factories they are cancelled for those born since 1882. There is no mention of teachers, although the list of callings given in the schedule includes the gypsum industry, monumental masonry, and silk-hat making.

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Since teaching is omitted from this extremely detailed schedule, we conclude that occupational exemptions granted to teachers will not be withdrawn at present, but that the few men of military age and fitness left in our schools will be allowed to remain. We hope that this is so, for national education is more than ever important just now. The vast and unexampled effects of this war will be felt most acutely some ten or fifteen years hence, when the thousands of young men who have fallen would have been carrying on the nation's work. Who will take their places? Doubtless, older men will have to extend their working years, but the main replacement must come from the younger men, those who are now boys in our schools. It is of the utmost importance that these boys should not be stinted in their intellectual training any more than they are in their food rations. The burden of the future will fall upon their shoulders far sooner than would have been the case if peace had continued, and for this burden they will need all the training we can give. Already, the work in the schools has been grievously hampered by the withdrawal of the younger and more vigorous members of the staff. There are many cases where more than one-half of the men have joined the Army. Efforts have been made to replace them by women teachers, but there are evident limits to this expedient. The girls' schools need all the women available, and although those who have taken up work in boys' schools are, by common consent, extremely efficient, it is found that with the senior boys they are seldom wholly successful. The Board of Education report shows that the number of pupils in State secondary schools has increased during the war, and this circumstance again enforces our plea that there should be no further inroads upon our teaching power.

The *Times Educational Supplement*, in its issue of April 11th, offers the suggestion that retired teachers should be recalled to serve in the schools in place of those who may be taken

for the Army under the new Act. This suggestion seems to ignore the fact that very few teachers have retired under the age limit since the war began. There has been considerable use made of the power vested in the Board of Education whereby the age limit may be extended on the application of a local education authority, provided that the Board is satisfied that the teacher in question is physically fit. Since the usual limit of age is sixty-five it follows that the practice of extension since the war began has had the result of retaining in the service some men who are now approaching seventy; while of those who retired before the war began almost all will be seventy or more. Of these, very few will be equal to the work of teaching under war conditions.

A better expedient might be found if the authorities would release from the Army those teachers who have been wounded and those who are physically unfit for active service. Many teachers have been kept in the Army long after it was known that their physical condition rendered them unfit for any combatant duty. One instance among many is that of a master in a well-known public school who was kept for some months at the task of tending a grass plot in front of the quarters of his colonel. While he was engaged in this menial form of military service the governors of the school were supplementing his Army pay and the headmaster was vainly trying to find another man to take his form. Absurdities of this kind have been far too common, and they will be repeated and made more frequent still if men above forty-one are taken from the schools into the Army. It is admitted that such men will rarely be of any value in the actual fighting, and our conviction is that the true interests of the nation are best served if they are permitted to remain in the schools where they are engaged in a form of national service second only to that rendered by men in the firing line. It is true that the service is indirect in character, but it must be remembered that whatever may be the outcome of this war we shall have need of the greatest possible number of highly trained men and women. Even in the improbable event of our being driven to sue for terms from Germany, the future of our country would rest with the children now in our schools. A victory of any degree would impose upon these same children the task of maintaining the liberties preserved by the war.

Education is not a luxury trade to be dispensed with in times of national stress and danger. It is as necessary to the life of the community as food to the individual, and wise statesmanship has always recognised that the education of a people becomes more indispensable the more that people's welfare is

imperilled. It was this which led Heinrich Stein to elaborate a system of State education for Prussia at the very nadir of that country's fortunes after the Peace of Tilsit. Mr. Fisher is animated by the same thought in bringing forward an Education Bill in these days of stress. The purpose is a wise one, but it cannot be attained unless we have regard to the question of man-power in the schools and agree that while those teachers who are fit for the fighting line may serve their country best by joining the Army, the remainder should be released from secondary employment with the Forces and told that the best service they can render is in the schools.

#### THE COST OF SCIENCE TEACHING IN SECONDARY SCHOOLS.

By DOUGLAS BERRIDGE, M.A.  
Senior Science Master, Malvern College.

**M**R. NOWELL C. SMITH, writing in THE SCHOOL WORLD (vol. xix., p. 341) in connection with the British Association Report upon Science Teaching in Secondary Schools, says: "The chief criticism to which the report lies open is on the score of expense. . . . This expensiveness is perhaps often exaggerated in controversy, but it is none the less a real problem." The same point was raised in 1907 by the late headmaster of Eton, who expressed the opinion at a meeting of the British Science Guild that the extension of science teaching in public schools was checked by the heavy expenses attaching to the necessary practical work.

It is obvious that if a knowledge of the elementary facts and methods of science is to be considered an essential part of a general education, and the "public schools" are unable to afford the necessary expense of such teaching, they must abandon their present isolated position and seek aid from the State to enable them to offer to their pupils the same advantages which can be found elsewhere, accepting at the same time the conditions which State control entails. Before advocating such a course it is, however, well to examine carefully how far the allegations of Mr. Nowell Smith and Dr. Lyttelton are justified by facts. Statistics may, of course, be made to prove anything, and in answering a question like the present it is first necessary to decide what items may be fairly included in the expression "expense of scientific teaching." On one hand, classical headmasters would include the salaries paid to their science staff; on the other, science masters are apt to imagine that when the bills of the apparatus dealers have been paid the whole cost of the science teach-

ing has been met. To obtain a just estimate of what this cost is, it is necessary to determine so far as possible what increase in the expenditure of a school council is caused by a certain number of pupils learning science rather than some other subject during each school period.

In the present article only boys' schools are considered; and, since science is a compulsory subject in all State-aided secondary schools, and complaints of the cost of teaching it have come only from the headmasters of schools not receiving such aid, most of the following figures refer to the so-called "public schools," others being referred to simply for the sake of comparison; for, as was pointed out by a committee of the British Science Guild in 1909, there is a very considerable difference in the cost of teaching science in the two classes of schools. In this connection such expressions as "public schools and other secondary schools" or "Conference and non-Conference schools" only lead to confusion; the distinction here drawn is between State-aided schools and non-aided schools.

The following items probably include all that can be fairly or unfairly classed as expenses of science teaching: (a) Salaries of science staff; (b) cost of apparatus, chemicals, and repairs to apparatus; (c) wages of laboratory assistants; (d) interest upon capital expenditure in building and fitting laboratories; (e) cost of gas, water, and electricity used for teaching purposes; (f) rates upon science buildings; (g) plumbing and general repairs to the laboratories.

#### SALARIES OF SCIENCE STAFF.

Secondary-school masters may be divided into two groups: (1) those who teach "Form subjects," i.e. who take the more elementary pupils in all subjects; and (2) specialists who teach only one subject. Both groups receive, as a rule, salaries on the same scale, and rank as equal to each other in all respects for promotion to housemasterships, qualifications for pensions, etc., and it is generally found economical to include several specialists upon the staff. Since no argument has ever been advanced to prove that the salary of a science master is greater drain upon the resources of the governing body than is that of his classical or mathematical colleague, no allowance for this charge has been made in the following estimate. Should it happen that a Form-master is unemployed whilst his Form is learning science, this is either due to the "time out" being necessary for the correction of written work, or to the inability of the headmaster to draw up a satisfactory time-table; in neither case can it be fairly claimed that time so

"lost" is a necessary result of science being taught.

#### COST OF APPARATUS, ETC.

In the report of the committee of the British Science Guild to which reference has already been made, it is stated that "it is widely recognised that simplicity and plainness in apparatus is a positive gain, and that the educational value of the instruction even increases with the bareness of the material by which it is supplied." This is even more true to-day than it was nine years ago, but it must be remembered that (quite apart from glass apparatus and delicate electrical instruments) it is necessary for much of the material used in laboratories to be bought ready-made, unless a considerable portion of the all-too-short periods now allocated to science teaching is to be devoted to workshop practice, or several experienced laboratory assistants are employed; for science masters are already over-worked, and it is physically impossible for them to devote much time out of school hours to manufacturing apparatus to be used by their classes. It is a rule, with scarcely an exception, that in those schools which pay good wages to laboratory assistants, and can therefore command the service of experienced men, the bills for apparatus are low, whilst the converse is also true, as is shown by the following table, extracted almost at random from a considerable number of returns received:

TABLE I.

School	No. boys learning science	Annual cost of apparatus	Annual wages of lab. assistants	Total cost per boy
A.	300	£180	£380	£1.87
B.	400	340	163	1.26
C.	200	250	80	1.65
D.	317	279	234	1.61

Taking the average expenditure upon apparatus by fourteen well-known schools, it is found to amount to almost exactly £180 per annum, the average number of science pupils in each school being 315.

#### LABORATORY ASSISTANTS.

In no department of school expenditure is economy more foolishly exercised than in the payment of laboratory assistants, for, as is shown above, it is a general rule that money spent in this direction is saved in others. The statistics collected relate to pre-war conditions, for, of course, it is impossible for schools to obtain the services of active men at the present time. The practice of different schools varies to such an extent that it is impossible to strike an average which will not be absurdly below the expenditure of some schools and equally above that of others: the actual figures range from £400 per annum in

one school to £18 in another. One school, which is well known for the attention it pays to science teaching, employs a senior laboratory assistant at £2 10s. a week, a junior laboratory assistant at £1 8s. a week, and a youth at 15s. 6d. a week, making a total of about £243 per annum. This is, however, above the average, which may be given, for what it is worth, at about £150.

#### INTEREST UPON CAPITAL EXPENDITURE.

It cannot be too strongly urged that science can be taught in buildings which make no pretence to architectural beauty. During the past fifteen years there has been a decided tendency for the more wealthy schools to spend very considerable sums in building large and ornate laboratories, and in at least one case expensive laboratories are to be erected as a memorial to its Old Boys who have fallen in the war. These buildings doubtless conduce to the comfort of the science staff, and afford an excellent advertisement for the schools which own them, and this advertisement may indirectly repay the governing bodies which erect them; but, since the value of the science teaching does not depend upon them, they cannot fairly be described as a necessary part of the expense of teaching the subject.

In calculating the initial cost of the laboratories the proper course is to determine the difference between the expense of fitting up a large and well-ventilated room as a laboratory and as an ordinary classroom, the cost of the necessary apparatus being, of course, added in the former case. There can be no doubt that it is a real economy when fitting up a new laboratory not to stint the plumber's estimate; the waste-pipes should be as large as possible, and both gas and water fittings of the best quality; but under normal conditions it is quite possible to fit up two laboratories, one for chemistry, the other for physics, each capable of accommodating about thirty-five pupils, for a total cost of £500. If to this sum is added another £500 for stocking both laboratories with the necessary apparatus, the total initial cost is found to be about £1,000, which, at 5 per cent., will require £50 per annum for interest. Additions to and replacement of apparatus have been dealt with under "Cost of Apparatus."

The initial cost of fitting a biological or a mathematical laboratory is so small that the interest upon the outlay may be neglected.

#### GAS, WATER, AND ELECTRICITY.

In determining the cost of gas and electricity it is necessary to distinguish between what is used for lighting (an amount slightly, if at all, greater than that required for a well-

lighted classroom) and what is used for heating, charging accumulators, etc. As both gas and electricity are generally taken from the same meter for lighting and other purposes, it is difficult to determine the exact sum which should be charged to the science account. It would have been expected that the quantity of gas consumed in various schools would have differed considerably, since those situated in or near large towns can buy distilled water cheaply, whilst others have to burn large quantities of gas in order to distil their own supplies. There is, however, a very general consensus of opinion that the total cost of gas, water, and electricity is about £35 per annum; and when the cost is worked out per boy, there is a really astonishing agreement, even between schools of very different sizes, that the cost is about 3s. per head per annum.

#### RATES.

A large number of schools have laboratories within the school buildings, and, of course, in these cases no separate rates are levied. In schools where the laboratories are detached, the rates depend upon the sizes of the buildings, and since these vary so much it has been found impossible to obtain sufficient data from which any general average can be calculated. The actual figures received vary between £350 and £29 per annum.

#### GENERAL REPAIRS.

The plumber and the gasfitter are naturally required more frequently in laboratories than in ordinary classrooms. The accounts for general repairs are occasionally paid by the senior science master and returned by him at the end of term in his "petty cash" account; but more frequently they are paid by the bursar, and in this case it is impossible to determine how much has been spent in any particular classroom. In a well-built laboratory it is, however, improbable that the annual expenditure under this head exceeds £10.

#### GENERAL CONCLUSIONS AS TO COST IN SCHOOLS RECEIVING NO STATE AID.

It will be seen from the above that it is a matter of great difficulty to obtain returns relating to all the charges which may be fairly included under the head of science teaching, not because there is any desire on the part of the schools to withhold the information (in fact, the writer of this article wishes to place on record his thanks for the very generous manner in which information has been afforded him), but because many of the smaller items are merged in the general accounts of the schools. In only one case has it been possible to obtain accurate information as to the expense under each one

of the above heads. This school is called "A" in Table II., and it will be noticed that the cost per boy-hour is, with one exception, higher in this school than in any other. Since, however, the number of boys learning science there is below the average, it may be considered that the cost per boy-hour given for it is above, rather than below, the average even when every possible item is included.

From the data received it seems that the average annual cost per boy is £1 11s. 4d., or, excluding rates and interest upon capital, £1 5s. 7d., the corresponding cost per boy-hour being 2·4d. and 2·1d. respectively. It must, however, be remembered that in the great majority of schools not receiving State aid a charge is made for the use of laboratories; this varies from 5s. to £2 per term and *rather more* than covers the total cost of the science teaching, the result being that in scarcely any case does this teaching cost the school authorities anything at all. If the average charge is taken as 15s. per term it will be found that in the majority of the schools now under consideration the additional charge to the parent amounts to 1·5 per cent. of the total school bills.

TABLE II.

No. boys learning science	No. boy- hours per annum	No allowance for interest on capital, etc.		Allowing for interest on capital, etc.	
		Cost per boy per hour in pence	Cost per boy per hour in pence	Cost per boy per hour in pence	Cost per boy per hour in pence
200	30,400	1 19 6	3·1	2 2 6	3·5
300	68,400	2 7 8	2·5	2 11 0	2·7
200	30,400	1 11 0	2·4	1 16 0	2·8
400	89,680	2 2 7	2·3	2 5 1	2·4
250	51,300	0 17 9	0·9	1 2 2	1·2
320	48,200	1 15 0	2·4	1 18 1	2·7
400	61,000	1 8 4	2·5	1 10 6	2·7
70	7,980	2 0 9	5·0	2 12 3	6·5
300	45,600	0 18 7	1·5	1 1 4	1·7
400	69,920	0 11 4	0·9	0 13 6	1·3

## COST IN STATE-AIDED SCHOOLS.

In order to compare the cost of science teaching in the two classes of schools a few of the larger schools receiving State aid have been asked for particulars. It appears that in these he cost is very considerably lower than in others. Probably this is due to three distinct causes: (a) Wages for laboratory assistants are very much lower; it is the exception for men to be employed, and only one, or possibly two boys are engaged to clean the laboratories; in some cases even these are dispensed with and some of the senior boys do the work in return for their tuition; (b) the fact that no laboratory fees are charged, and grants for science teaching are strictly limited, imposes a more rigid economy upon the science staff than is necessary in the so-called "public schools"; whilst (c), since the leaving age is generally lower, very few boys stay on after they have either ob-

tained a scholarship or passed the Inter. B.Sc. examination; and it is these advanced pupils who are responsible for a very considerable portion of the expenditure in schools where the leaving age is eighteen years and a half.

No attempt has been made to calculate the cost of science teaching in all the State-aided schools, but from details supplied by those which most resemble the "public schools" in number, etc., it seems that the average cost per boy per annum is 9s. 2d., whilst the cost per boy-hour works out at 0·82d. In obtaining these figures no account, however, has been taken of the cost of rates or of interest upon capital expenditure, and in only a few cases have returns of the cost of gas, water, and electricity been received.

## GRAPHICAL INTERPRETATION.

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WE do a great deal of graphical work in schools now. Some people think we do too much. There has, in fact, been a tendency to overdo the mechanical labour of plotting curves, without any regard to the connections between the forms of the equations and the forms of their graphs. It has been rather like teaching the use of a vocabulary, without showing how to link the words together to form sentences. Still more does it resemble the gathering of shells from the seashore in a miscellaneous collection, without grouping them together so as to learn how to recognise at a glance to what species any given specimen belongs.

The subject is vast, and endless in its ramifications. But let us here consider a few of the more simple forms, just as we may consider a few typical univalves and bivalves in a museum.

## LINEAR EQUATIONS.

Beginning with the linear equation, we show that it may always be reduced to the form

$$Px + Qy + R = 0,$$

and that in its turn this may be written

$$y = mx + b,$$

after transposition, and division by Q.

We must exhibit this concretely. Thus we may take

$$2x - (y - 6) = 3y - 6(x + 1),$$

and make the class reduce it first to

$$8x - 4y + 12 = 0,$$

and then to  $y = 2x + 3$ .

We must tell the pupils what is meant by the words *slope*, *gradient*, and *intercept*. Then let the class observe that, whatever the graph of this equation may be, we can at least fore-

tell that its intercept on the axis of  $y$  is 3, by putting  $x=0$ ; and, similarly, that its intercept on the axis of  $x$  is  $-\frac{3}{2}$ , by putting  $y=0$ .

[Ask for these intercepts in the cases of  $y=4-3x$ ,  $y=x^2-4$ ,  $3y+x=6$ ,  $Px+Qy+R=0$ , etc.]

Next observe that for every unit that we add to the value of  $x$ , in the equation  $y=2x+3$ , we must add two units to the value of  $y$ ; so that if we plot the points where  $x=1, 2, 3$ , etc., the values of  $y$ , viz. 5, 7, 9, etc., ascend like a straight ladder or flight of steps.

Similarly, show that, in the case of  $y=mx+b$ , as the value of  $x$  increases by one unit, that of  $y$  increases by  $m$  units; and, if  $x$  increases by one-tenth of a unit,  $y$  increases by one-tenth of  $m$  units, always in the same proportion of  $m$  steps vertically upwards for every single step horizontally forwards. This will generally convince a pupil, more quickly than any other reasoning, that the locus of a linear equation is a *straight line*.

At the same time this determines the *gradient* to be 2 in the case of  $y=2x+3$ , and

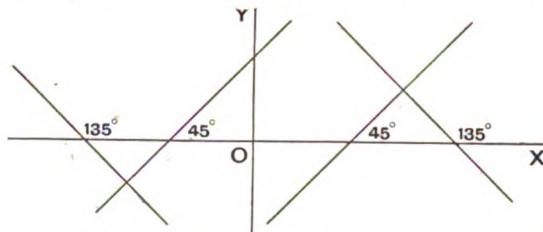


FIG. 1.—Diagram to show lines with slope =  $45^\circ$ , gradient = +1; and lines with slope =  $135^\circ$ , gradient = -1.

$m$  in the case of  $y=mx+b$ ; or, more generally,  $-P/Q$  in the case of  $Px+Qy+R=0$ .

We may now ask for the gradients of  $y=4-3x$ ,  $3y+x=6$ , etc., and find out whether any pupil can say why we cannot see at a glance what the gradient of  $y=x^2+1$  is. Exercises may also be set on determining the *slope* of the lines by means of a table of trigonometrical tangents, due attention being paid to the negative sign (Fig. 1).

Make it clear that, with the axes in the usual positions, the slope must always be measured on the *right-hand side above* the axis of  $x$ , and that then a negative gradient means an obtuse slope.

From this to the immediate detection of *parallel* lines is an obvious step, and the change from a given slope to the *supplementary* slope by merely changing the sign of the gradient—that is, the sign of the coefficient either of  $x$  or of  $y$ —should present no difficulty.

This leads to the consideration of *complementary* slopes, by inverting the gradient, or by merely interchanging the coefficients of  $x$  and  $y$ . Get the pupils to point out why the gradient  $\frac{1}{2}$  is complementary to the gradient

2. Ask what gradient is complementary to  $\frac{1}{2}$  and what is the relation between the lines  $y=mx$  and  $x=my$ .

We thence pass to the more difficult question of *perpendicular* lines. Show that the perpendicular slope is the supplement of the complement, or the complement of the supplement, of the given slope. Hence we must both invert the gradient and change its sign; in other words, both interchange the coefficients of  $x$  and  $y$  and change the sign of one of them (Fig. 2).

Thus, if  $y-mx=0$  be the equation of the line  $OL$ , having a slope of  $20^\circ$ , then  $m=\tan 20^\circ$ . The line  $OC$  has the complementary slope of  $70^\circ$ ; its equation  $x-my=0$  is found either by interchanging  $x$  and  $y$  or by inverting  $m$ . The line  $OS$  has the supplementary slope of  $160^\circ$ ; its equation  $y+mx=0$  is found by changing the sign of the coefficient either of  $x$  or of  $y$ . The line  $OP$ , perpendicular to  $OL$ , must have its slope  $110^\circ$ , complementary to that of  $OS$ , and supplementary to that

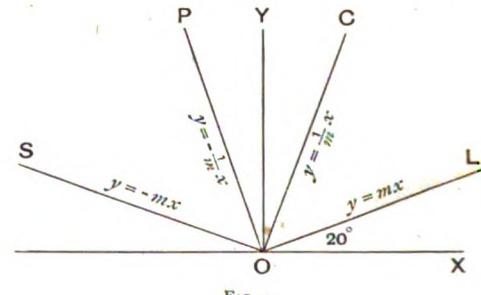


FIG. 2.

of  $OC$ ; its equation  $my+x=0$  is found by making *both* changes, which is equivalent to inverting  $m$  and altering its sign.

Make it quite clear that if we treat  $ax+by+c=0$  in the same way we produce exactly the same effects upon the slope and the gradient, but that the four lines no longer pass through the same point. In order to make them pass through any given point we must also alter the value of  $c$  in each case.

Ask for the lines through the origin having slopes which are (i) complementary, (ii) supplementary, (iii) perpendicular to  $ax+by=c$ : viz. (i)  $bx+ay=0$ , (ii)  $ax-by=0$ , (iii)  $bx-ay=0$ .

Now we can revise with a set of examples, such as the following :

- |                  |                  |
|------------------|------------------|
| (i) $y=3x$ .     | (iv) $2y=x+3$ .  |
| (ii) $2y=6x+5$ . | (v) $6x+3y=1$ .  |
| (iii) $x+2y=4$ . | (vi) $9x-3y=2$ . |

Ask what graph each equation denotes. Thus (ii) denotes a straight line of gradient 3 cutting off an intercept  $2\frac{1}{2}$  from the axis of  $y$ . Which lines are parallel? Ans.: (i), (ii), (vi). Which have supplementary slopes? Ans.:

(iii) and (iv). Which complementary?  
 Ans.: (iii) and (v). Which are perpendicular?  
 Ans.: (iv) and (v).

Since we are here dealing with forms only, and not with potentialities, we need say no more about the linear equation, except perhaps to point out that

$y - k = m(x - h)$  and  $a(x - h) + b(y - k) = 0$   
 denote lines passing through the point  $(h, k)$ .

This might be followed by an exercise on writing down the equations of straight lines passing through a given point and parallel or perpendicular to a given straight line, or having a complementary or supplementary slope. That should be sufficient, since we are not concerned with the formalities of co-ordinate geometry.

#### QUADRATIC EQUATIONS.

We can now begin to study the quadratic equations, and should concentrate on three forms, viz.  $x^2 = cy$ ,  $x^2 + y^2 = c^2$ , and  $xy = c^2$ .

Starting with  $x^2 = y$ , we should, first of all, make the general shape of the graph quite clear, especially near the vertex, where the beginner is apt to make the curve too narrow, or even pointed, instead of gracefully rounded. Ask for the values of  $y$  when  $x = \frac{1}{2}, \frac{1}{3}, \frac{1}{5}, \frac{1}{10}$ , to show how closely the curve lies along the axis of  $x$  near the vertex.

The three obvious points on the locus, viz.  $(0, 0)$ ,  $(1, 1)$ , and  $(-1, 1)$  should be carefully noted, as well as its symmetry about the axis.

The name "parabola" should be mentioned; and the *latus rectum* may be described as that chord (perpendicular to the axis) the length of which is four times its distance from the vertex.

Thus, in the case before us, we want to find where  $x$  is twice  $y$ . Writing  $2y$  for  $x$ , we get  $4y^2 = y$ , so that  $y = \frac{1}{4}$  and  $x = \frac{1}{2}$ . Hence the length of the *latus rectum* is one unit; so that  $x^2 = y$  may be called a parabola of unit size.

Exercises may be set on finding the dimensions of parabolas such as  $y = 2x^2$ ,  $3y = x^2$ ,  $x^2 = 4x$ ,  $5y^2 = x$ . Thus, taking  $x^2 = cy$ , we write  $2y$  for  $x$ , and obtain  $y = \frac{1}{4}c$ ,  $x = \frac{1}{2}\sqrt{c}$ , whence the *latus rectum* of the parabola is  $c$ . Similarly,  $x = ky^2$  is a parabola of size  $1/k$ , and the distance of its *latus rectum* from the vertex is  $1/4k$ . We may also note that the *latus rectum* cuts the axis at the focus; so that  $1/4k$  is the focal distance of the vertex in the last case.

It should be obvious that  $y = x^2 + 1$  is simply the curve  $y = x^2$  translated unit distance parallel to the axis of  $y$ . Similarly,  $y = kx^2 + b$ , or  $y - b = kx^2$ , is simply the parabola of size  $1/k$  translated a distance  $b$  parallel to the axis of  $y$ . Hence changing  $y$  into  $y - b$  moves the curve up a distance  $b$ ; and changing  $y$  into  $y + b$  moves the curve down

a distance  $b$ . It is easy to show that this argument applies to any curve whatever, and that in the same way changing  $x$  into  $x - a$  moves the curve to the right a distance  $a$ , whilst changing  $x$  into  $x + a$  moves the curve to the left a distance  $a$ .

Hence  $p(x - a)^2 = q(y - b)$  is a parabola of size  $q/p$  and has its vertex at the point  $(a, b)$ , the focal distance of which is  $q/4p$ ; so that  $(a, b + \frac{q}{4p})$  is the focus. A rough sketch will make it clear.

We can now ask for a verbal description of the graphs of such equations as the following :

- (i)  $y = 2x^2 + 3$ .
- (ii)  $3y + 5 = -(x - 1)^2$ .
- (iii)  $x - 3 = 4y^2 - 4y$ .

Thus (i) is a parabola of size  $\frac{1}{2}$  having its axis parallel to the axis of  $y$ , and vertex downwards at the point  $(0, 3)$ .

So also (ii) is a parabola of size 3 having its axis parallel to the axis of  $y$ , and vertex upwards at the point  $(1, -\frac{5}{3})$ .

Again, (iii) can be written  $x - 2 = 4(y - \frac{1}{2})^2$ ; hence it is a parabola of size  $\frac{1}{4}$  having its axis parallel to the axis of  $x$ , and vertex on the left at the point  $(2, \frac{1}{2})$ .

Then we may ask for the equation of a parabola of size 3, and vertex upwards at the point  $(-1, 2)$ . Ans.:  $(x + 1)^2 = -3(y - 2)$ , or  $x^2 + 2x + 3y = 5$ .

We can now treat the circle in the same way, showing that

$$(x - a)^2 + (y - b)^2 = c^2$$

is merely the curve  $x^2 + y^2 = c^2$  moved  $a$  units to the right and  $b$  units upwards, so that it represents a circle of radius  $c$  having its centre at the point  $(a, b)$ . Exercises follow, such as transforming

$$x^2 + y^2 = 4x + 6y + 3$$

into  $(x - 2)^2 + (y - 3)^2 = 16$

by merely completing the squares; so that it represents a circle of radius 4 having its centre at the point  $(2, 3)$ .

Taking  $x^2 + y^2 = a^2$ , and changing  $y$  into  $2y$ , making  $x^2 + 4y^2 = a^2$ , we obtain a curve in which the ordinates are half the original size. We may define an ellipse as a curve derived from the circle by a projection which reduces all the ordinates in a constant ratio. Thus  $x^2 + 4y^2 = a^2$  must be the projection of the above circle at an angle the cosine of which is  $\frac{1}{2}$ —that is, at  $60^\circ$ .

Similarly,  $x^2 + n^2y^2 = a^2$  is the projection of  $x^2 + y^2 = a^2$  at the angle the cosine of which is  $1/n$ , so that it is an ellipse of major axis  $a$  and minor axis  $a/n$ . Writing it in the form

$$\frac{x^2}{a^2} + \frac{y^2}{a^2} = 1,$$

and then changing  $a/n$  into  $b$ , we obtain

$$\frac{x^2}{a^2} + \frac{y^2}{b^2} = 1,$$

showing that the latter is an ellipse of axes  $a$  and  $b$ .

The class should now be able to see that

$$\frac{(x-2)^2}{9} + \frac{(y+1)^2}{25} = 1$$

represents an ellipse of axes 3 and 5 having its centre at (2, -1); and that

$$(x+3)^2 + 4y^2 = 16$$

represents an ellipse of axes 4 and 2 having its centre at (-3, 0).

In dealing with the rectangular hyperbola  $xy=c^2$ , its central symmetry and the fact that the axes of reference are asymptotes should be emphasised. Writing it in the form  $y=k/x$ , we show that it represents *inverse* proportion, just as  $y=kx$  represents *direct* proportion.

It will easily be seen that  $y=\frac{2}{x-3}$  and

$y=\frac{2}{x}-3$  represent rectangular hyperbolæ of the same size, the former with its centre at (3, 0), the axis of  $x$  being one asymptote, and  $x=3$  the other asymptote; the latter with its centre at (0, -3), the asymptotes being the axis of  $y$  and  $y+3=0$ .

More generally,  $xy+ax+by=c$ , which can be written  $(x+a)(y+b)=c-ab$ , represents a rectangular hyperbola  $\sqrt{c-ab}$  times the size of  $xy=1$ , having the lines  $x+a=0$  and  $y+b=0$  as asymptotes; its centre is at (- $a$ , - $b$ ); and  $(x+a)+(y+b)=0$  and  $(x+a)-(y+b)=0$  are its axes of symmetry.

Note the reversed positions of  $xy-c^2=0$  and  $xy+c^2=0$ , and ask what is represented by  $kxy+ax+by+c=0$ .

Before passing to the cubic equation, we may perhaps deal with the hyperbolæ

$$x^2-y^2=c^2 \text{ and } \frac{x^2}{a^2}-\frac{y^2}{b^2}=1$$

in a manner similar to that in which we treated the circle and the ellipse. The reversal of position, by interchanging  $x$  and  $y$ , or by changing the sign of the independent term on the right-hand side of the equation, should be noted.

#### THE CUBIC EQUATION.

We may now deal with the cubical parabola  $y=x^3$ , and the semi-cubical parabola  $y^2=x^3$ .

In the case of the former we must emphasise its central symmetry, and its flatness near the bend, or turning point, at the origin of co-ordinates. The fact that the  $x$ -axis is a tangent which cuts the curve at the point of contact must also be noted.

Questions on transference of the centre to the point ( $a$ ,  $b$ ) by changing  $x$  into  $x-a$ , and  $y$  into  $y-b$ , will be treated as before.

It may be pointed out that, to obtain a similar curve  $k$  times the size of any given curve, we must change  $x$  into  $x/k$  and  $y$  into  $y/k$ . Thus the curve  $k$  times the size of  $y=x^3$  is  $y/k=x^3$ , which reduces to  $k^2y=x^3$ . Hence  $y=cx^3$  is similar to  $y=x^3$ , but is  $1/\sqrt{c}$  times the size.

The pupils should now be able to state that

$$p(x-a) + q(y-b)^3 = 0$$

represents a cubical parabola  $\sqrt{p/q}$  times the size of  $y=x^3$ , having its centre at ( $a$ ,  $b$ ), and the line  $x=a$  for its central tangent; that the curve extends to infinity on the right below that tangent, and on the left above the tangent; and that it has no asymptotes.

The semi-cubical parabola  $y^2=x^3$  is interesting on account of the cusp at its vertex. Note that, giving  $x$  the successive values  $1, \frac{1}{4}, \frac{1}{9}, \frac{1}{16}, \dots$ , the corresponding value of  $y$  are  $\pm 1, \pm \frac{1}{2}, \pm \frac{1}{3}, \pm \frac{1}{4}, \dots$ , showing how closely it lies along the  $x$ -axis as we approach the origin; so that it terminates in a sharp point at the vertex, where the  $y$ -axis is a cuspidal tangent as well as an axis of symmetry.

The curve  $cy^2=x^3$  is  $c$  times the size of  $y^2=x^3$ ; so that riders such as those upon the preceding curves can now be set.

The curve  $\dot{y}=1/x^2$  will be a useful exercise for those who are studying physics. It is increased to  $\sqrt{c}$  times the size by writing  $y=c/x^2$ .

Practical illustrations of many of these curves will naturally occur to the teacher. The forces of gravitation, magnetism, and electricity will illustrate the last-mentioned curve. We may take the path of a projectile, or the ratio of the flat side of a coin (of given thickness) to the area of its rim, as illustrations of the common parabola; the ratio of the volume of a terrestrial globe to that of its cylindrical axis (of given diameter), or the weight of a row of cricket-balls compared with the length of the line they occupy, may illustrate the cubical parabola; and a comparison of the air-space in a room of given shape with the floor-space or window-area, or the light required to produce a given illumination upon its walls, may be used to illustrate the semi-cubical parabola.

*The Stories of "Macbeth," The Story of "A Midsummer Night's Dream."* (Blackie's Smaller English Classics.) 32 pp. each. (Blackie.) 3d. each.—*M.* Walter Higgins has with great success interwoven some of the text with a modified version of Lamb. The modification is but slight, and without doubt the new arrangement deserves and will find a welcome. *M.* Lamb was answerable for the comedies, and it would be interesting to find out whether school readers endorse the opinion of older critics in regard to her share in this renowned work.

## THE DIRECT METHOD OF TEACHING LATIN.

By R. B. APPLETON, M.A.  
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IT is more than six years ago<sup>1</sup> that I first wrote to THE SCHOOL WORLD upon this subject, and during the intervening years I have gained more from a further experience of the method than I have lost from a possible diminution—if any such there has been—of youthful ardour. I should be sorry to think that my own methods have not considerably changed, during these six years—for the essence of the direct method is its *vitality*, and all that lives changes; but, more than this, I have had a certain amount of experience in the training of students and others who intend to become direct-method teachers. What I have learnt from them has done more than anything else to explain to me the comparatively slow growth of the method. Every one of them was, of course, hampered by a lack of familiarity with Latin as a spoken language. The worst gave lessons in which Latin was indeed spoken, but they were not lessons on the direct method—they were rather the old *construe* lessons conducted in Latin instead of in English; there is, however, no mystical value in asking *Qui casus est?* rather than *What case is it?* The best gave lessons which contained the right idea, but the development of it was hindered, if not prevented, by the teacher's lack of fluency. This is a big difficulty (I had almost said, the chief difficulty), which we must make up our minds to face and to conquer. It will eventually, I hope, be overcome by direct-method pupils returning to our schools in later life as direct-method teachers.

But, meanwhile, we must all make strenuous efforts to increase our fluency; it is part of our theory that our pupils should acquire a good deal inductively, if not indeed intuitively, and the theory is sound. If our pupils fail to do this as a matter of fact, in *practice*, then the fault is that of the individual teacher and not of the general method. It matters not how this fluency be developed—by continued classroom practice, personal *sotto voce* exercise, conversation in Latin with colleagues and others, or what not<sup>2</sup>—but developed it must be, if our teaching is to be a success. This is the first, but not the only, difficulty.

The Latin which we wish our pupils to acquire is a literary rather than a colloquial

Latin.<sup>3</sup> It is my belief that all boys trained in Latin on the direct method get far more profit, from the vitality and general mental stimulus incidental to the method, than they could possibly do from what we used to call the mental gymnastics of the old gerund-grinding system; but I am thinking now of the comparatively few members of our classes who will some day become classical scholars and must first compete for university entrance scholarships. These need Ciceronian Latin, and therefore we must be equipped to provide it. We cannot hear this spoken as a living language, but we must do the next best thing—we must read it to ourselves and hear it read aloud whenever possible. Everyone knows that the best way to learn a language is to live for a time in the country in which it is spoken; and at the risk of dwelling upon a platitude I should like to recount a recent experience of mine. Some time ago I had a Greek living with me for a few months, during which he learnt—as was, indeed, only natural—far more English than I did modern Greek. When Greece entered the war, in order to “join up” he returned home by way of Italy, where he stayed a few weeks, and wrote to me in English from there. His letter was written in by no means such good English as he had frequently written in essays for me long before he left. The moral is obvious—he had not heard English spoken for several weeks—and its application to the present problem is that, as we cannot be hearing, we must, at any rate, be continually reading classical, and preferably Ciceronian, Latin. I know from my own experience that my class-teaching has suffered whenever I have passed long periods without much reading of my own at home. It is not so much that one can actually bring into class-conversation definite Ciceronian idioms and phrases (though this is, of course, important, of which anon) as that one's Latin is insensibly so much better if one comes fresh from Cicero the night before.

Generalities are of no use, and so I make the practical suggestion that all those who are attempting to teach Latin on the direct method should read a new speech of Cicero at least every month. The speech may—if it be one of the shorter ones—be read through in one night; but it is not then finished with: it should be read again and re-read again, and, as I suggest, provide part of the teacher's mental *pabulum* for a week or even a month. It is not a bad idea to put a little tick or other mark

<sup>1</sup> November, 1911. See also THE SCHOOL WORLD for September, 1912.  
<sup>2</sup> Personally I gained much by a fortnight's holiday one summer with a friend, when we both spoke nothing but Latin (or what was meant for Latin) all the time.

<sup>3</sup> I take it that the direct method has by now sufficiently justified its claims to render it unnecessary for me to defend the latent paradox here. We talk Latin, not as an end in itself, but as the readiest method of learning the language; our ultimate object is to read the literature with as much ease as possible.

in the margin of one's working edition opposite to all the useful idioms; this can then be taken into class, and by rapidly glancing over a few pages one is in the position to give the boys many *purpurei panni*. I have myself done this with the Fourth Form. It should be explained that the boys had for some years been in the habit of having one period every week (during their year in the Fourth Form<sup>4</sup>) devoted to the making of speeches. They are given a free hand—I merely listen and correct mistakes—and those of them who have any fluency take great delight in preparing their little *oratiunculae* upon all manner of subjects. Last year for the first time I tried the experiment of giving them definite Ciceronian phrases and tags which they incorporate, sometimes with great ingenuity, into their own efforts. I have set aside one period for this, during which I glance down the pages of my Cicero and read out any phrase which strikes me, for the boys to take down in their note-books. I give an idiomatic and free English rendering, which is taken down on one side of the note-book, and the Latin is written opposite. Then a home-work period is given for the learning of them.

Recently, for example, we have had such things as the following, which I select at random :

## ENGLISH.

Dear old-fashioned people who judge others by themselves.  
To be busied about trifles.  
To waive one's claims.  
To omit.  
Without dereliction of duty.  
I beg you to hear me with indulgence and attention.

To some extent.  
To come to such a pitch that . . .  
To do away with a person.  
It is generally agreed.  
A life given up to debauchery.  
An abandoned wretch.  
Imaginary.  
Unless I am mistaken.  
Your father told me a very different story.  
To take part in politics.

## LATIN.

Homines antiqui qui ex sua natura ceteros figunt.  
Reduviam curare.  
De suo iure decidere.  
Missum aliquid facere.  
Salvo officio.  
  
Quapropter vos oro atque obsecro, iudices, ut attente bonaque cum venia verba mea audiatis.  
Aliqua ex parte.  
Eo prorumpere ut . . .  
  
De medio tollere aliquem.  
Inter omnes constat.  
Vita vitiis flagitiisque omnibus dedita.  
Perditus.  
Commenticius.  
Nisi me fallit animus.  
At hercule longe aliter fatque tu] pater narravit.  
Rei publicæ interesse; in re publica versari; ad rem publicam accedere.

is a conglomeration of English and Latin in an ordinary reading lesson, but we must never avoid English for the sake of avoiding it. Such a lesson as I have just described, though not itself an essential part of the direct method, may very well be a most useful preparation for excellent and enjoyable direct-method lessons. For, as I have said, my immediate object was to provide the boys with some stiffening, as it were, for their weekly speeches; and when these are over I always avail myself of any time which may be left to make criticisms—is it necessary to say *in English*?—or offer suggestions about the improvement of the Latin period, etc.

To give a definite example, I remember quite recently using some ten minutes which were left of a "speech lesson" in which to point out the great extent to which the length of an oratorical period often depended upon the use of the inverted relative in various cases, and I illustrated my point by demonstration upon the blackboard with an imaginary period of this sort :

*Qui numquam antea in re publica versatus est, quem omnes imprudentem iudicant, cuius facta ac dicta a persona gravis hominis omnino abhorrent, ea nemo umquam impune fidem habuit, a quo omnia iura iam violata sunt, ei, patres conscripti, huius administrationem tradam?*

The sense of power and confidence which quite young boys acquire from this sort of thing reacts upon their whole work, and the direct method provides such splendid opportunities for the display of that power, which grows by being exercised. But unless the boys have good tools, they cannot do good work. Let us see to it, then, that we give them good tools, and the lesson in which the tools are given will be conducted in English (it may be as frequent as once a week if the teacher sees fit), for the tools are for the sake of the work, and this English lesson, or, as I should rather say, lesson conducted in English, is for the sake of producing better Latin lessons during other periods.

To make what I mean clear I conclude by quoting a speech prepared—quite voluntarily, in his own time—and delivered in class by a Fourth Form boy who was at the time exactly fourteen years and three months old. It is, of course, entirely his own work and has not been corrected in any way.<sup>5</sup> My object in quoting it is simply to illustrate the freedom and power which the direct method gives a quite young boy in the wielding of the language; and to avoid any possibility of mis-

All this is worth mentioning if only to dispel the idea that the direct method always eschews the use of English. What is to be deprecated

<sup>4</sup> I.e. their third year of studying the language.

<sup>5</sup> Except by the boy himself between his delivery of it and the ~~process~~ of the "fair copy" to me. These corrections did not amount to more than the removal of some half-dozen "slips" in all.

apprehension I wish to state quite frankly that few of my pupils are capable of work as good as the speech which follows. Naturally it is only of the good speeches that I have troubled my young orators to furnish me with "fair copies," and it so happens that the one which I have selected to quote—because it illustrates my point better than any of the others which I have had preserved—is by the best boy in my present Fourth Form. So let not other direct-method teachers be discouraged if they fail to get work of this standard from the average boy in their classes (if such a thing were possible, the direct-method teacher would be an even happier mortal than he is—which is saying a great deal!) If any insist upon looking at it as a criterion of what kind of work can be done on the direct method, then they must take it as an example of what the best boys (and not the average boy) can do. But this is not what I want my reader to do. I want him to examine it as a very interesting and—I freely confess—very artificial product. For the psychology of it is, I venture to suggest, of extreme educational importance.

Here we have a young boy attempting to model himself upon the idea of Cicero's style which he has gained from some odd tags and phrases dictated to him.<sup>6</sup> Personally I do not think highly of Cicero as a man, and question whether a less inspiring author ever wrote. What he has left behind him is, as R. L. Stevenson has said, "a poor diet for the mind, a very colourless and toothless 'criticism of life'; but we enjoy the pleasure of a most intricate and dexterous pattern; every stitch a model at once of elegance and of good sense." Not that the boy whose speech follows has attained anything of this elegance; his work is, on the contrary, a very crude and, in some ways, ridiculous patchwork.<sup>7</sup> But the psychological interest is just this: that the attempt to weave into his work the *purpurei panni* given to him has insensibly lifted his *oratiuncula*, both in phraseology and in idea, above the usual sphere of boys' interests into a plane which we generally associate with a more adult mentality. Here is no question of priggishness<sup>8</sup> or precocity, but merely of that development of the mind which is the object of education. Words are a great aid to thought; and just as Stevenson played the "sedulous ape" to his great predecessors in English literature—though only so far as style is concerned—so I submit that it is of great educational interest to study what effect upon a boy's habitual mental outlook (though,

of course, it is only to a small extent) can be produced by giving him "tags," and often isolated words, such as I have suggested, and then asking him to make a speech upon any subject he likes. But enough of my preamble; I conclude by quoting the speech:

#### DE DISCRIMINE HIBERNIÆ ORATIO.

Hodie, patres conscripti, ego qui orationes nonnumquam pro amicis, et sæpenumero in adversarios habui, de discrimine Hiberniæ, quod ante bellum, etiamque nunc, apud omnes qui ad rempublicam accedunt, summi momenti est, pauca vobiscum deliberabo; quapropter, vos oro, et obsecro, patres conscripti, ut attente, bonaque cum patientia, omnes rationes auditatis, animisque concipiatis.

Primo autem quod omnes de gestis facinoribusque Hibernorum, quos fideles, constantes, probos antea finximus, non bene intelligunt, qui hora summi discriminis perfidos, ingratos, infideles se præstabant; quibus nos omnia beneficia, fas, iura, quibus cives nostri fruuntur, copiose concessimus, vos, patres conscripti, certiores faciam.

Ut iam dixi, Hiberni omnino liberi erant; at, Hercule, lohge aliter de libertate ac senatores nostri existimaverunt, quod etsi hæc iura habebant, concionatores, plebicolæque nonnulli, qui apud plebem et rhetorice et astutia semper plurimum poterant, iniurias fictas contumeliasque commenticias, putaverunt se videre, et hoc modo, animos auditorum aliqua ex parte induxerunt, ut et leges, et bellum pacemque constituendi potestatem soli habere cuperent, ut exercitum et classem suam omnino disiunctos esse vellent, et reapse, ut natio separata liberaque fierent; et quo studiosius ad libertatem eos impulerunt, eo magis Hiberni, summo odio commoti, et verbis senatorum, armisque plebis, monstraverunt se sub imperium nostrum diutius manere nolle. Hi autem, qui bellum intestinum commovebant sui quæstus aut commodi causa, plebem modo agitant, quo facilius, ut ad gubernacula reipublicæ tandem sederent.

At ne quis forte stupefactus sit me tanta vi vehementiaque eos damnare, ne ei, qui ob gravitatem orationis ab Hibernis faciant, et ad misericordiam propensi sint, ne quis putet me facinora gestaque auxisse, eo rem iam adducam ut nihil divinatione opus sit.

Ego, patres conscripti, qui hanc orationem in Hibernos habeo, consuetudine atque amicitia cum eis coniunctus sum, atque ego, qui et cives, sociosque meos vehementer accuso, reprehendo, etiam eis male-dico, consiliumque eorum vitupero, Hibernus sum!

At, Hercule, etsi Hibernus, longe aliter de libertate, de fas, ac iuribus, quæ putant se merito habere necesse esse, ac cives popularesque mei existimo; et etsi odio eis forte ero, licet ipsi bellum intestinum contra nos, qui omnia iura, summaque beneficia præbuius, summo odio commoveant, ego cum eis me numquam coniungam, et etsi nomen de perfidia deferant, animum inducere, ut tantam temeritatem, insaniamque præbeam, numquam poterunt.

Nunc, patres conscripti, non multum dicendum est mihi, quod omnia gesta, omnia facinora, quæ ante

<sup>6</sup> It should be mentioned that he has not yet read a single page of Cicero.

<sup>7</sup> In order that the extent of the boy's originality may not be underestimated, I should state that the speech was composed after only three (weekly) lessons of the kind described above.

<sup>8</sup> I have never had the pleasure of teaching a more charming pupil than the one in question.

bellum acta sunt, omnes iniurias commenticias, querimoniasque fictas, iam vobis exposui.

Nec levi coniectura penditur res, quod ego, qui vitam gestis Hibernorum' e pueru dedidi, in republica eorum semper versatus sum.

Qua propter, vos oro, et obsecro, iudices, ut summa cura, maximaque cum sollertia, omnes pactiones eis concedatis, quod tam magni momenti se res habet, ut non oporteat nos leviter transire, ac tantum modo perstringere rem.

Whatever may be thought of the above, it is certainly not "nursery Latin"—the reproach often brought against the direct method—and I recommend any who are teaching Latin on new lines to see what they can themselves do in the way of bringing about a similar "stiffening" in their pupils' work by the simple device of giving them tags and phrases from Cicero—not only, of course, from the orations (the Letters are an excellent hunting-ground), but anywhere from Cicero and perhaps, for colloquial phrases, from Plautus and others.

#### A NATURE-STUDY MUSEUM IN A RURAL SCHOOL.

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**C**URIOSITY is one of the important factors in human nature that make education possible. For this reason the teacher who can command the means to excite his pupils' curiosity in any given direction will find the success of his efforts to educate them considerably augmented. Under the name of Nature-study nearly all teachers nowadays make an attempt to bring before the notice of their pupils some of the interesting phenomena that are to be observed in their natural surroundings, and in some cases this work occupies a very prominent place in the curriculum. The object of this article is to show how curiosity in this subject has been first of all roused, and then stimulated, among the children in a rural school by making use of the collecting instinct, which the teacher will find to be existent in nearly all his pupils.

Nature-study is not to be attempted from books, although these must have some place in any scheme. To be of real value it requires that the students should actually possess, handle, and observe for themselves the things which are the objects of their study for the time being. A single specimen, even if it be passed round by the teacher, is insufficient for the purpose, and a lesson in Nature-work taken in this manner is, at the best, only a modified form of lecture. The provision of specimens for the pupils is a necessity if the work is to be as valuable a training as it ought to be.

When a course of work extending over a period, say a month, is entered upon with a class, it becomes necessary to keep specimens in hand during the whole period, because it may well happen that when the course starts the objects required will be plentiful, but they may be entirely unobtainable later in the course. This keeping of temporary collections of specimens may be looked upon as the germ of the school museum. Often enough it remains a germ.

Where the school possesses one of the so-called museum cupboards the matter advances a small stage further. The oddments thus collected are placed on the shelves of the glass-fronted, upper portion of the cupboard. From time to time fresh specimens find their way into it, and the whole affair is then frequently dignified by being called "the museum." In most cases the specimens are, after their admission, severely left alone, and the result, in a year or two, is a chaotic collection of odds and ends that is nearly, if not quite, useless.

About fifteen years ago this distinctly rural school in the West Midlands underwent a change of headmaster. The newcomer soon became ambitious of carrying on Nature-study upon lines different from the mere preparation and delivery of weekly lessons on disconnected aspects of Nature. It was felt that Nature-lessons should be serial in character, and so the need for the preservation of specimens became apparent; there was, however, no place in which to keep them. To remedy this a museum cupboard of the kind mentioned was requisitioned. It consisted of a low, deep-cupboard, about 3 ft. 9 in. wide, 1 ft. 6 in. deep, and 2 ft. 9 in. high, with one shelf inside, forming the bottom half, while on the top was fixed a glass-fronted cupboard about half as deep, with four adjustable shelves. The total height of the two parts was about 7 ft.

When the children realised the purpose of the new cupboard natural objects of various kinds speedily turned up. As they came in they were properly labelled, and the bottom shelves of the glass-fronted portion were filled with specimens illustrating the particular course of lessons which was being proceeded with. When the course was finished new objects were naturally required; but, instead of the old objects being thrown aside, they were stored away in cardboard boxes in the bottom cupboard. In this way there came into existence in a few years the nuclei of various collections, illustrating many of the natural features around the school, and the specimens, being easily accessible, frequently proved very useful.

The next step forward became possible through the arrival in the village of a gentle-

man who was a keen naturalist. He came to stay at a local farm for a considerable time, and during the period of his visit he devoted nearly all his time to a study of the natural features of the farm he was on. The large numbers of specimens that he collected were housed in empty sweet-boxes, the separate specimens being placed in small cardboard boxes, pill-boxes, or empty match-boxes. He became greatly interested in the Nature-work in the school, and through his influence the teacher was enabled to get the grant of another cupboard, as well as about two dozen glass-topped specimen cases. In addition, the visitor had made, and presented to the school, a piece of furniture something after the character of a kitchen dresser, but with two shelves only at the top. Before he finally left the village a public exhibition was arranged of his own and the school collections combined, and it resulted in a "crowded house." He left behind, for the use of the school, a great part of his collections,

and on the strength of this the authorities allowed the purchase of a large cupboard for storage purposes.

By this time the school, which consisted at this period of three small rooms, began to be inconveniently crowded with museum

furniture, and any further expansion seemed out of the question. Soon, however, one of the classrooms was condemned for teaching purposes, and it was ultimately decided to replace it by adding another room to the other end of the school. Here was an opportunity, and it was immediately seized upon by the teacher. As soon as the school was closed for the purpose of extension the museum furniture and collections were transferred bodily to the old classroom, and while the workmen were busy the headmaster also was busily engaged in preparing the room for its new purpose.

To help the reader to grasp the details of the arrangement finally decided upon, a plan of the room is here given (Fig. 1), showing its general shape and the arrangement of the furniture. The room itself is long and narrow (19 ft. 6 in. by 9 ft.). The door, fireplace, and two windows are clearly indicated, and the last-named, it may be mentioned, are high up in the walls, the

sills being 6 ft. and 7 ft. high respectively. After much careful measuring-up and consideration it was decided to arrange the furniture as shown. The dresser was placed at A, and the glass-fronted portions of the two cupboards were removed from the bottom sections and placed on an old form against the wall at BB. They were fastened to the wall to keep them in place. The store cupboard was placed at C. Some old desk-tops being available, a breast-high shelf, supported on legs at intervals, was erected and fastened to the wall at the same side as the store cupboard; reaching from it to nearly the other end of the room. Two similar shelves, one over the other, were fixed up at the bottom end. Various other shelves were hung on brackets from the walls of the room. The bottoms of the two museum cupboards, placed back to back at D, provided a sort of table. In this way a large amount of shelf space became available, and the school museum began to deserve its name.

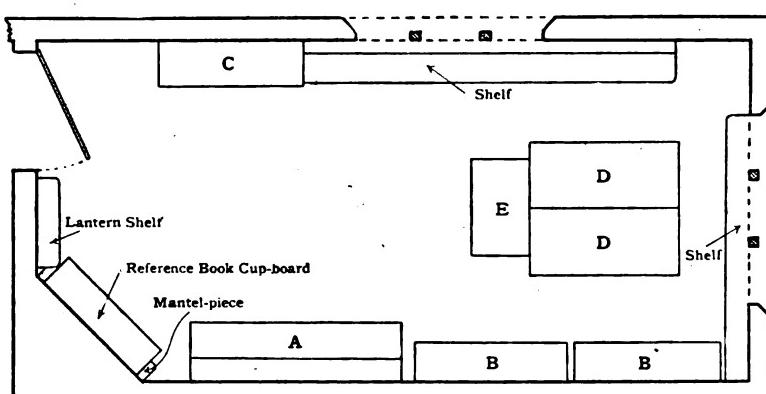


FIG. 1.—Plan of the museum-room.

also been fixed over the mantelpiece to contain books of reference on Nature-work useful to teachers and pupils, and a substantial shelf has been fixed inside the door to carry the school lantern. The latter can be constantly and effectively employed in teaching if the teacher makes his own slides. The next stage of development naturally arose from a difficulty which increased with the growth in the size of the collections. They began to be unwieldy, and so it became necessary to consider how to standardise the accommodation both of the collections and of individual specimens, that being the method employed in large museums. Two other advantages secured by doing this are that interchange of the specimens is facilitated, and the extension of the collections by the inclusion of new specimens in their proper places is made comparatively easy. The first step was made when permission was obtained to requisition a supply of wood ordinarily used for light woodwork, and

from this, when it arrived, about a gross of trays were constructed. Fig. 2 gives a good general idea of the design of these trays. All of them were 1 ft. square, and were made in two depths, some being 1 in. and others 2 in. deep. The deeper had bottoms of wood, but the shallow boxes were bottomed by gluing the frames to squares of millboard. A number of gauges and fitments were made to enable the cutting and nailing of the trays to be carried out more speedily, and the making of them was done in a few evenings with the help of three evening woodwork students.

Thirty-six pieces of glass, each 1 ft. square, were bought to rest on the tops of the trays when they were placed out for exhibition. The specimens were then placed in these trays, and the sweet-boxes and cardboard boxes were dispensed with. By the time the school re-assembled everything had been arranged so that the children might visit the museum at any time they felt inclined to use their spare time

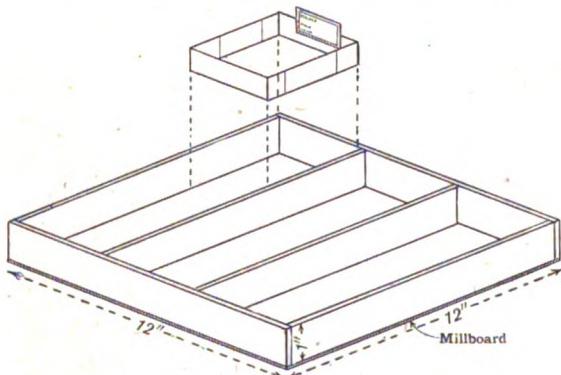


FIG. 2.—Projection of new specimen tray and removable standardised paper tray. Not to scale.

in that manner. Since these trays were completed the work of providing a standard form of accommodation for each individual specimen has been, and still is, going on. Each specimen is being placed by itself in a stout paper or light cardboard tray, and these little trays are made in such sizes that they are readily changed from one position to another in the wooden trays. At the same time new labels with printed headings are replacing the written ones, and the collections are being more systematically classified. Progress in this work is slow, because the headmaster's time is necessarily limited, and also because the specimens themselves are numerous, comprising as they do fairly complete collections of local wild flowers, fossils, rocks, land and freshwater shells, fungi, mosses, lichens, birds' eggs, insects, spiders, fruits, etc.

Two points of importance may be here brought forward. The first is that the specimens are in great proportion purely local,

being the outcome of the children's own collecting. Rarities are not sought after, although they are accepted when they are brought in. "Familiarity breeds contempt," and most of the children would pay little heed to the hundreds of common, yet curious, things that exist right in front of their eyes, were it not that their attention is directed to them and to their importance by the fact that they are exhibited in the school. The second point is that under the present system many of the specimens are only occasionally being shown, and that at suitable seasons. This variation of exhibits prevents staleness and stimulates interest.

There are two fairly obvious lines of development along which the future of this school museum lies, one touching upon the collections themselves, and the other upon their increased use for educational purposes. The latter is, of course, the more important of the two, and no one feels this more than the teacher who is responsible for it. Indeed, he would never have given a large amount of his leisure time to the scheme if it had been intended merely to make good collections. The word "museum" means "temple of the Muses," i.e. a place for study, and a few experiments are now being made in utilising the collections for individual work. A few selected children are following out, from written instructions and guidance based upon the collections, individual lines of study, and should these prove to be as successful as it is hoped they will be, oral lessons in Nature-study in the upper class of the school will gradually be discontinued, and the pupils will work upon independent lines.

#### THE SCHOOLS AND EMPIRE DAY.

**T**HE idea of devoting one day in the year to an effort to make our people conscious of their heritage and thoughtful of its destiny is slowly gaining ground. Yet it has still to fire the popular imagination. The average artisan has scarcely heard of it, and the politically active section of working-men scouts it as a token of an effete, but arrogant, imperialism, or of a still more contemptible commercialism which is moved only by the prospect of markets and concessions. They remember the old formula "Trade follows the Flag." To many others empire means emperors, and emperors suggest autocracies. Some day, perhaps, official usage will sanction "British Commonwealth," and we, too, may have a Commonwealth Day, a far happier expression of British ideals than Empire Day.

In the meantime, may not the schools do something to hasten such a change? They have in the past, perhaps, been insensibly affected by the imperialistic note, and though

they have escaped the theatrical manner of Sedan Day in a Prussian school, they might do much to lift the celebration to a higher level by using it to emphasise a great political ideal. Educated men and women need only to picture the present situation in France to become forthwith acutely conscious of all that this unique "Empire" of ours stands for. But many people are not so clear in their minds. "What difference would it make to me if Germany did win the war?" asked the suffering wife of an intelligent artisan of the writer. The question is in the minds of many ill-informed, but cruelly injured, people. Such doubts are not essentially disloyal. They are, if you like, born of ignorance, but they deserve an answer. If the world would not be the poorer for the triumph of a military despotism over an alliance of the free peoples of the world, then, indeed, is our suffering vain. Can the schools not help to bring both knowledge and consolation to those whose agony seems so meaningless to them? An Empire Day, celebrated in this spirit in every school in the land, would lift the whole idea above every suspicion of vulgarity and ostentation. In such an effort the schools might give strong and dignified intellectual direction to what is often little more than instinctive feeling. A vague sense of national danger has hitherto been sufficient to unite us at critical moments, but emotional excitement alone is not a safe foundation for the complex political structure of which we are the centre. Should we not try to transmute the imperial sentiment from pride of possession into passion for a grand political object?

Politics, in the party sense of the word, cannot, of course, enter the school, but citizenship is not a party question. An Empire Day which does not bring into strong relief the relation of the empire to the daily life of its people is scarcely worth keeping. An empire which is content to leave its citizens, or the vast majority of them, in ignorance, in poverty bordering on indigence, and herded together in insanitary dwellings, is not worth maintaining. Slowly, perhaps, but surely, we are, as a people, realising our corporate responsibilities in these matters. Our own islands offer problems enough in these directions, but the Empire makes them the concern of a quarter of mankind. What have we done in the past? What have our daughter States accomplished? What are our ideals concerning those peoples who are still under our guardianship?

It is, of course, true that the war has made us explicitly aware of much that we previously took for granted and consequently thought little about. Let us take advantage of the time and bring these things before the minds of our older boys and girls by consecrating Empire

Day to a consideration of ideals which are endangered almost by the mere prospect of German triumph. Our land is the original home of political freedom. From us it has passed over the whole world. The Hohenzollerns and Hapsburgs are the last resisting bulwarks of mediævalism. They, too, are doomed. But political freedom is not an end in itself. We conceive it now as a means to a still higher freedom, to the attainment of which future effort will be directed. The British Empire has to play a part in working out the social and political conditions for the moral freedom of its peoples. Herein lies its ultimate destiny. That, and that alone, can give spiritual value to the celebration of Empire Day, and schoolmasters may surely bend their minds to the problem of how best to give this deeper significance of the celebration explicit recognition.

#### THE WELSH UNIVERSITY AND THE SECONDARY SCHOOLS.

By A. E. L. HUDSON, B.A.

THE secondary schools of Wales, which provide a large proportion of the students who enter the University, are naturally deeply interested in the findings of the Royal Commission on University Education in Wales, which has recently presented its final report (Cd. 8,991, price 1s. net). Quite naturally, therefore, the Central Welsh Board, the Welsh County Schools Association, the Incorporated Association of Assistant-masters in Secondary Schools, and the National Union of Teachers figure amongst those who gave evidence before the Commission. Some part of their evidence, of course, relates to matters affecting the University only, but the greater part is concerned with the interests of the pupils they send up and with the relation between their own work and that of the teachers under whose charge their pupils pass.

Nominally, the door by which the pupil leaves the school for the university is matriculation, and the schools are equally concerned with the university in the regulations that affect the examination giving the right of passage and the time when the actual passage is made. If the schools were capable only of preparing up to matriculation standard the matter would be quite simple; the work would be in separate water-tight compartments; but the schools can do much more than this. It is by no means uncommon for a pupil to reach matriculation standard long before his character and experience are sufficiently developed to fit him for university life and to give him the proper university outlook. It is natural that the university should wish to capture brilliant students at an early age, with the view of fitting them for

honours degrees and research work; but the schools contend that the pupils who can pass the matriculation examination at sixteen will do better both for themselves and for the university if they remain at school until they are at least eighteen. In the last two years of their school life they can then get a valuable training in the exercise of responsibility, exert a great influence on the tone of the whole school and on future generations of university students, and get a more real and a maturer knowledge of the subjects of their studies.

A student who can just manage to pass matriculation is not at a stage at which he can profit by university training; he has still much to learn of the "grammar" of his subjects, whatever they may be, and it is only when he has obtained a real grip of them, and is conscious that he can do his work with power, that he is fitted to take advantage of the tutorial and lecture system—with which he should, however, have had a gradually increasing acquaintance in the Sixth Form. Naturally, therefore, the students who are best equipped for doing well at the university are those who have reached intermediate standard at school. As both school and university witnesses pointed out, even if such students nominally do the work over again at college, they do it in a different atmosphere and with a sure foundation of familiarity with the elements. They do not "mark time," and unless they have been badly taught, they have not to unlearn what they learnt before, but rather to look at it from a new point of view—a distinct advantage, since all truth has many facets.

Moreover, the effect of taking away the highest work from the schools would be utterly bad for the students directly concerned, for the teachers, and for the rest of the pupils—especially those of them who do not proceed to the university. So the schools demand to keep the pupils for two years after their matriculation and to have the work of those two years recognised, after examination, as an efficient preparation up to university intermediate standard. It was pointed out, during one hearing, that the efficiency of the schools had, in practice, raised the age of actual entrance to the university. No demand was made that the requirement of three years' university residence should be relaxed; but it was suggested that a student who, by reason of efficient preparation, was able to pass his final after two years would have a year left for research work before the degree was actually conferred.

The report does not refer to the demand made by the Assistant-masters' Association for a universal interchangeable matriculation examination, admitting to any university in the

kingdom. This may be accounted for by the existence of the Board of Education's scheme for two standard examinations, which, so long as the Welsh Department holds its present position, may be taken to apply also to Wales. But, in case of the institution of a National Council of Education for Wales, this is one of the matters that will require attention. Whatever measure of autonomy may be granted to Wales, no student must be allowed to be placed at a disadvantage on one side of the border because he happens to have been born or to have received his early education on the other; and the like must apply to the migration of teachers to and from Wales.

Many criticisms were aimed at the unnecessary complication of the stages leading up to the bachelor's degree. The assistant-masters pointed out that the terms "ordinary," "intermediate," "special," "final," and "honours" had, especially in the case of the second and third, little meaning, and only puzzled the outsider and bewildered the student. Principal Griffiths went so far as to say that not more than three persons in the University understood the regulations; so it is not strange that the Commissioners recommend the simplification of the system.

The representation of the schools is to be increased. At present three members of the Court of the University are appointed by the headmasters and headmistresses of the intermediate schools; the proposal is that these shall be appointed by the schools recognised as efficient by the Board of Education, thus admitting the municipal and county secondary schools; also there are to be two representatives of the assistant masters and mistresses in the same schools. The Commissioners suggest that the professional associations are the proper bodies to select these representatives.

The professional training of teachers was a very thorny subject, and the report does not venture to make any definite proposals. The teachers themselves, the university colleges, and the training colleges all looked at the matter from their own point of view. The view of the teachers was that the training of a teacher or the academic side should be that of any well-educated person, and that the only difference should be the addition of a year of definite professional training and practice; they looked forward to the time when, as a rule, the qualification for any grade of teaching should be the possession of a degree, and—again backed up by Principal Griffiths—deprecated the segregation of intending teachers from the general body of students, in the interest of the teachers themselves.

Many other matters, on which the report has much to say, will have a marked, though in-

direct effect on the schools: increased attention to technological studies; the fostering of Celtic studies, of music, and of preparation for agricultural pursuits, for commerce, and for the medical profession—all these are matters which the reconstituted University is asked to take under its wing. If these suggestions prove as fruitful in development as they are in intention the University may be a most potent agent to further alike the intellectual progress and the material prosperity of Wales.

#### PERSONAL PARAGRAPHS.

**T**HE Council of the Senate of Cambridge University has decided to offer a grace proposing to confer the degree of doctor of laws, *honoris causa*, upon the President of the United States; *in absentia*, and President Wilson has signified his willingness to accept the degree.

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MISS MARY SPALDING WALKER is resigning, on account of ill-health, the headmistress-ship of the Roan Girls' School, Greenwich, which she has held for twenty-three years. Born in Aberdeen, Miss Walker was educated there and at Alexandra College, Dublin, and, after taking her B.A.Lond., she was trained at the Cambridge Training College. As an assistant-mistress at the North London Collegiate School, Miss Walker taught under Miss Buss, and in 1892 was appointed headmistress of the West Ham High School, whence she proceeded to the Roan Girls' School in 1895. At that time this school prepared its senior pupils for the Cambridge Local Examinations and was inspected by the Cambridge Syndicate. From 1895 onwards many and rapid changes took place. The school admitted London County Council scholarship girls in large numbers, and accepted the grants of the Board of Education with all its difficult early conditions. This necessitated the building of science laboratories and the extension of practical teaching in science and domestic economy. A large, new gymnasium and the introduction of net-ball furthered the physical development of the pupils. The London Net-ball Association was started in the school hall. The result of all the new activities has been the foundation of a thoroughly democratic type of school which, in a modest way, has evolved traditions of its own not consciously imitated from existing institutions. Miss Walker is now serving a third period of five years on the executive of the Headmistresses' Association, and is the only woman member on the committee of the Simplified Spelling Society.

SIR HENRY JONES is a candidate for the Parliamentary representation of the Welsh Universities under the new Act. Since 1894 Sir Henry has held the professorship of moral philosophy at Glasgow. Previous to this he held appointments as professor of philosophy and political economy at University College, Bangor, professor of logic and metaphysics at St. Andrews, and Hibbert lecturer on metaphysics at Manchester College, Oxford. He is the author of "Browning as a Religious and Philosophical Teacher" and "The Philosophy of Lotze." Simple and unaffected in manner, and not troubled by conventionalities, Sir Henry embodies the best attributes of Welsh character, and his open disposition and sincerity would make him a valuable addition to the representatives of education in Parliament.

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MR. H. P. LUNN has been appointed headmaster of Yardley Secondary School. Educated at Almondbury Grammar School, Yorkshire College, Leeds, and Owens College, Manchester, Mr. Lunn graduated in science in 1901. After being an assistant-master for more than three years at Llandilo County School, he became research scholar and demonstrator in physics at Owens College. Later he held appointments at Coleraine Academical Institution, Barry County School (second mastership), and is at present senior physics master at Holloway County School. Mr. Lunn has been a prominent member of the Assistant-masters' Association for many years; he was secretary of the association in 1915-16 and chairman in 1917. He has also occupied the chair of the Legal Sub-committee of the I.A.A.M. for nearly four years, and much of the success of the Secondary, Technical, and University Teachers' Insurance Society is due to his indefatigable energy. Tireless in his endeavours on behalf of education and the welfare of secondary-school teachers, Mr. Lunn's well-deserved promotion will be welcomed by all who have been connected with him in his many and varied spheres of activity.

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MR. W. L. GRANT, who was formerly an assistant-master of the school, has returned to Upper Canada College as its headmaster. Mr. Grant was doing excellent work with the Army in France when he was summoned to return to Canada. He returned only when General Turner, his G.O.C., personally ordered him back, telling him that his work in England and France, satisfactory though it had been, was less important to the nation than that which a suitable headmaster could do at Upper Canada College. At his installa-

tion, last December, Mr. Grant delivered a speech, a copy of which has come into my hands. It breathes the highest ideals, and I wish every schoolmaster in England could have heard it. His views of the duty of headmasters to those of their boys who do not go on to the universities deserve special emphasis. "I hope," he said, "to give all lawful help and encouragement to every boy in this school; I shall certainly be proud of all university honours won; but the boy in whom I take the deepest interest is the boy whose formal education ceases with this school. The boy who goes on to the university has another chance; the boy who leaves the school to enter business or industry must henceforward find his way through the woods without a blaze. Woe to us if he leave us unilluminated and unquickened! I am convinced that in a proper course, properly taught, in the modern humanities, centring in, though not wholly composed of, instruction in and through the English language and literature, lies the best hope of the education, of the quickening and the illumination, of this very important class of citizens."

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IN my note of last month referring to the large candidature list for the post of secretary to the Edmonton Education Committee, I should have said there were 260, and not 100, applicants. Unfortunately, too much confidence in Press-cuttings caused me to state that the Marquis S. M. E. Roault de Longueville De Bucy was a candidate for the vacant position. News has reached me from Edmonton that this was not so, and I must hope the Marquis will forgive my inadvertent mistake.

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IT is announced that Mr. C. H. Blakiston, of Eton, has decided, on the advice of his medical attendant, to withdraw his acceptance of the wardenship of Radley College. The appointment was referred to in these columns in the April issue.

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BY the will of the late Dr. Butler, Master of Trinity College, Cambridge, several bequests are made to educational institutions. The insignia of the Order of the Crown of Italy are bequeathed to Harrow School. The insignia were presented to Dr. Butler, whilst he was headmaster at Harrow, by the King of Italy, whose nephew received his education at the school. Pictures, seals, biographies, and a silver Declamation Cup, formerly belonging to the late Dr. Whewell, are left to Trinity College. The National Portrait Gallery is to secure the bust of his sister-in-law, the late Josephine Butler, by Alexander Munro, and his

portrait, by Herkomer, is to be retained as a family heirloom or hung in Trinity College.

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SIR SWIRE SMITH, M.P. for the Keighley division of the West Riding, died on March 16th in his seventy-seventh year. Few men have done so much, both by example and precept, to encourage the practical side of education. At the age of twenty-five his interest in education was aroused by a lecture delivered at Huddersfield by the late Dr. Samuel Smiles, who declared that Great Britain was in danger of losing her predominance in industry by her neglect of scientific and artistic training. He found that the only educational facilities of Keighley, beyond the elementary schools, were afforded by the Mechanics' Institute, which the late Sir Isaac Holden attended, and from the library of which Charlotte Brontë and her sisters were borrowers. Sir Swire Smith was made secretary of the institute, and thenceforward devoted his life to the promotion of technical education, which had hitherto been completely neglected in the district. It was owing to his endeavours that the Keighley Trade and Grammar School—which has been a model for the country—was opened in 1870. Its day school—organised on scientific lines—attracted the clever boys from the elementary schools by scholarships and sent up such a procession of scholarship holders to the Royal College of Science and the Royal College of Art that Huxley made the interrogation: "Where is this Keighley?" In 1900 Augustus Spencer, a prize student from Keighley to South Kensington, was appointed principal of the Royal College of Art itself. Sir Swire was blessed with an exceptionally strong physique and possessed a very winning and versatile personality. His townsmen honoured him by presenting him with the freedom of the borough and his portrait painted by Solomon J. Solomon, R.A. He was seventy-three years old when he was first elected M.P., and in 1888 his valuable services were recognised by a knighthood.

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THE REV. T. HOWEY NICHOLS, headmaster of King's School, Pontefract, who resigned recently owing to advancing years, died suddenly on April 13th. Mr. Nichols was educated at Hartley University College, Southampton, and St. Catharine's College, Cambridge. He was a scholar of his college, taking the Maths. Tripos—senior optime—in 1882. His teaching experience included five years at Bancroft's School, four years at Brighton Grammar School, and eight years at King Edward's School, Birming-

ham. He also acted as inspector of schools in Ireland, and took up his appointment at King's School in 1890. Mr. Nichols had taken a considerable share in the administration of education in Pontefract for many years. He was the hon. secretary of the technical schools for twenty-eight years, chairman of the Evening Schools Committee under the municipality, a member of the Education Committee, and a manager of the Church day schools.

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OFFICIAL information has been received in Nottingham that 2nd Lieut. Reginald C. F. Dolley, of the Sherwood Foresters (T.F.), who was reported missing on July 1st, 1917, is now presumed to have been killed in action. Mr. Dolley was educated at the Watford Grammar School and proceeded to University College, London, graduating with first-class honours in history in 1909. He became history master at West Leeds High School and, whilst there, obtained his M.A.Lond. In recognition of his exceptional merit, he was elected a fellow of University College, London, in 1913. From Leeds he proceeded to take up his appointment as lecturer in—afterwards professor of—history at Nottingham University College, resigning this position in 1915 in order to join the Inns of Court O.T.C. His death is deeply regretted in Nottingham, particularly among the University students.

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MR. J. W. TOWNSEND STORRS, late headmaster of the Grammar School, Doncaster, died on March 8th at Sandown. Mr. Storrs was appointed to Doncaster in 1890 and resigned in 1901, and during his tenure the school became an organised science school. He was well known in the district as an ardent naturalist and an enthusiastic gardener and bee-keeper.

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THE death is announced of Mr. David H. Patrick, science master at Bablake School, Coventry, since 1895. Mr. Patrick was educated at Holy Trinity School, Coventry, and trained at Saltley Training College. His success at the latter institution led to an appointment at the Saltley Practising School, from which he resigned to engage in science teaching at Bablake School and Coventry Technical Institute.

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THE Oxford University Press announces for early publication a volume entitled "The Theory and Practice of Language Teaching." The author, Lieut. E. Creagh Kittson, who is at present serving in France, has been a frequent contributor to THE SCHOOL WORLD.  
ONLOOKER.

## THE POSITION OF SCIENCE IN SCHOOLS.

THE report of the Committee appointed by the Prime Minister to inquire into the position of natural science in the educational system of Great Britain, of which Sir J. J. Thomson was chairman, has now been issued (Cd. 9,011, price 9d. net). So far as the teaching of science in schools is concerned the report has few suggestions of a novel kind to make; but it stresses most of the recommendations with which recent reports drawn up by various committees appointed by scientific bodies and educational associations have familiarised headmasters and governing bodies. The Government Committee makes it quite clear throughout its report that if there is to be satisfactory work in science done in the schools, the career of a science teacher must be made much more attractive both by increased social esteem and by greatly augmented emoluments. Even now there is a serious shortage of science masters and mistresses; and, if the recommendations of the report are to be carried out, a much larger number of teachers will be required. If the schools are to secure teachers with the high qualifications the report lays down as necessary, especially in view of the competing claims of industry, governors of schools must somehow find the money necessary substantially to increase the salaries offered, and to do this further State aid must be forthcoming.

We hope the report will receive the attention its importance deserves. We print below the parts of the summary of the principal conclusions of the Committee which more directly affect the teaching of science in schools.

### SUMMARY OF PRINCIPAL CONCLUSIONS.

**GENERAL.**—Natural science should be included in the general course of education of all up to the age of about sixteen. The tests of such a course, recommended in the report, should with necessary modifications be accepted as the normal qualification for entrance to the universities and professions. Real progress in education depends on a revolution in the public attitude towards the salaries of teachers and the importance of their training. A large increase in the number of scholarships at all stages of education is necessary. Periodical inspection should be compulsory on all schools, and this inspection should be under the direction of the State.

**SECONDARY SCHOOLS.**—Steps should be taken to secure for all pupils in State-aided secondary schools a school life beginning not later than twelve and extending at least up to sixteen. Science should be included in the general course of education for all pupils in public and other secondary schools up to the age of about sixteen, and this general course should

be followed by more specialised study, whether in science or in other subjects. In all secondary schools for boys the time given to science should be not fewer than four periods in the first year of the course from twelve to sixteen, and not fewer than six periods in the three succeeding years. Increased attention should be given to the teaching of science in girls' schools. In girls' schools with a twenty-four-hour school week, not fewer than three hours per week should be devoted to science in the period twelve to sixteen. A larger number of State-aided schools should be encouraged to provide advanced instruction in science, and those which undertake advanced work should be staffed on a more generous scale. In suitable localities there should be some school or schools where less time should be given to languages and additional time to English, science, mathematics, manual instruction, and drawing. In the curricula of all preparatory schools provision should be made for the teaching of the elements of natural science. The usual age of entry into the public schools should be lowered to thirteen, and this should be the maximum age for entrance scholarship examinations. The elements of natural science should be a necessary subject in the entrance examination of public schools, and due weight should be given to this subject in the entrance scholarship examinations to public schools. General education would be benefited by there being no division of schools into sides at the twelve to sixteen stage.

**SCIENCE COURSE TWELVE TO SIXTEEN.**—The science work for pupils under sixteen should be planned as a self-contained course, and should include, besides physics and chemistry, some study of plant and animal life. More attention should be directed to those aspects of the sciences which bear directly on the objects and experience of everyday life. There should be as close correlation as possible between the teaching of mathematics and science at all stages in school work. The present chaos of English weights and measures causes waste of time and confusion of thought, and there are strong educational reasons for the adoption of the metric system. All through the science course stress should be laid on the accurate use of the English language.

**SCIENCE COURSE SIXTEEN TO EIGHTEEN.**—The amount of time devoted from sixteen to eighteen to the subject or subjects in which a pupil is specialising should be not less than one-half or more than two-thirds of the school week. Those specialising in science should continue some literary study, and those specialising in literary subjects should give some time to science work of an appropriate kind. Courses in science should be provided for those specialising in subjects other than science. Pupils who do advanced work in science should be enabled to acquire a reading knowledge of French and German. Eighteen should be the normal age of entry from secondary schools to the universities, and the age limit for entrance scholarships at Oxford and Cambridge should be reduced to eighteen.

**EXAMINATIONS.**—In the First School Examination all candidates should be required to satisfy the examiners both in mathematics and in natural science. In this examination there should be co-operation between the

teachers and examiners, and weight should be attached to the pupil's school record. The examinations in science for the leaving certificate of the Scottish Education Department should include a written test.

**TEACHERS IN SECONDARY SCHOOLS.**—It is essential that the salaries and prospects of teachers in secondary schools should be substantially improved and a national pension scheme provided. A full year's training shared between school and university is necessary for all teachers in secondary schools. Grants for teachers in training should be available for all suitable inspected secondary schools. Short courses of training of various types should be provided for teachers.

**LABORATORIES.**—The teachers in State-aided schools should be given freedom and responsibility in the selection and purchase of laboratory appliances up to a fixed annual amount.

**ELEMENTARY SCHOOLS.**—Increased attention should be given to the provision of suitable instruction in science in the upper standards of elementary schools. A larger number of students in training colleges should be encouraged to take advanced courses in science. There should be in every elementary school a room in addition to the ordinary class-room accommodation available for work in science and other practical subjects.

**TECHNICAL EDUCATION.**—Greater efforts should be made to develop and increase the provision of instruction in pure and in applied science in technical schools and institutions of all grades. Arrangements should be made for consultation between the various institutions giving secondary and technical instruction within any area. Many more scholarships are needed to enable technical students to pass on to the universities, and also to enable boys from junior technical schools (or their equivalent) and from evening schools to enter senior technical schools. The position of junior technical schools in the educational system should be reconsidered. It is essential that the salaries and prospects of teachers in technical schools should be substantially improved, and a national pension scheme provided for whole-time teachers. In the proposed continuation classes provision should be made for instruction in science both in its general aspects and in its bearing on industry.

**ARMY.**—Science should be an obligatory subject in the examination for entrance into the Royal Military College, Sandhurst, and should be included in the course of instruction in the college. Steps should be taken to improve the efficiency of the instruction in science at the Royal Military Academy, Woolwich. More encouragement should be given to officers at later stages of their career to improve their scientific qualifications.

**UNIVERSITY EDUCATION.**—The universities should adopt the First School Examination as the normal examination for admission, and should abolish special matriculation examinations for candidates from schools. Greek should not be retained as a necessary subject in Responsions at Oxford or the Previous Examination at Cambridge. The universities should make special arrangements to test the fitness for entrance of candidates who are more than twenty-three years of age.

**SCHOLARSHIPS AT SCHOOLS AND UNIVERSITIES.**—Scholarships should be considered as distinctions awarded in recognition of intellectual merit and promise. All scholarships should be of nominal value, to be supplemented according to need. Where necessary, the whole cost of a scholar's education and maintenance should be defrayed. Scholarships at the universities should be tenable for at least three years, with a possibility of extension. Those awarded by local education authorities should not be restricted to particular universities. Scholarships at the universities should be awarded on a wider range of subjects than at present. The age limit for scholarships at Oxford and Cambridge should be eighteen rather than nineteen. Scholarships should not be awarded on work done in large pass examinations for schools. Those available at the universities for candidates from technical and evening schools should be awarded without an age limit, and for the present on a limited range of subjects. The number of scholarships at the women's colleges should be increased. Loan funds should be established to enable senior students to obtain professional training.

### THE CENTRAL-SCHOOL SYSTEM OF LONDON.<sup>1</sup>

THE central-school system of London dates from the educational year commencing April 1st, 1911. The schools are primary in character, and definite regulations were issued by the authority concerning their conduct and organisation.

**OBJECTS OF THE SCHOOLS.**—The idea embodied in the formation of the central schools was that they should form the crown of the primary-school system in London. To accomplish this a certain number of the ordinary schools were grouped together and contributed children to the central school. The children were selected for admission who were considered the most suitable intellectually, and they were chosen from those who did best in a competitive examination—the Junior County Scholarship Examination—after the junior county scholars had been drafted to secondary schools.

The education authority was desirous of offering to these specially selected children an opportunity, under the most favourable conditions as regards premises, equipment, and staff, of carrying on their education beyond the standard of the highest classes in the ordinary primary school.

The central schools, therefore, provide to some extent a definite preparation for future employment, both in commerce and industry, without its being vocational in aim or in scope. A circular issued by the L.C.C. states that "the chief objective of the central school is to prepare boys and girls for immediate employment on leaving school, and the instruction should therefore be such that children should be prepared to go into business houses and workshops at the completion of the course, without any intermediate special training."

From this it is clear that the central-school system occupies a position intermediate between the secondary

and the trade school. It is distinguished from the former by the leaving age of the children being lower and by the fact that the curriculum is less academic in character; while it differs from the latter by the lower age of admission for children and by the fact that the pupils receive no definite technical training for any specific trade or business. For the education given is vocational only to the extent that it receives a definite "bias," either in the direction of industry or in that of commerce.

A school may have either a commercial or an industrial (*i.e.* technical) bias, while in a few schools the curriculum makes provision for teaching from both points of view, and the bias is then said to be "dual." The bias becomes effective immediately on admission, although the difficulty of judging, at so early an age, the child's "bent" has lately led to some slight modifications in this respect in certain "dual bias" schools.

When the system is fully developed London will have sixty central schools, so distributed that one school at least shall be reasonably accessible to the children from every primary school.

At the present time there are fifty central schools, and, in addition, there are others, still called higher grade schools, which admit children as in the case of central schools, but their curriculum differs somewhat from that of the central schools.

The fifty central schools are classified thus:—

	Boys	Girls	Mixed	Total
With commercial bias ...	5	7	12	24
With industrial bias ...	5	1	3	9
With dual bias ... .	7	7	3	17
	—	—	—	—
	17	15	18	50

To these schools about five thousand children are admitted each year at the beginning of April.

Pupils may be transferred from one central school to another as necessity arises by reason of removal from one district to another, but no new pupils are admitted during the year, except with the express sanction of the authority, after examination by the head teacher of the school at which admission is sought. Thus real continuity of teaching is obtained throughout the yearly periods. Central schools are not handicapped by double or terminal promotions, or by other similar vexatious proceedings; while no class exceeds forty pupils.

**SELECTION OF PUPILS.**—As has been already stated, the Junior County Scholarship Examination forms the basis of selection. The examination is taken by all pupils in the ordinary schools who are between the ages of eleven and twelve on March 31st of the year of admission, and working in Standard IV. or some higher standard.

The practice generally followed is for the district inspector to select possible candidates for admission from each contributory school according to the attainments of the children as shown by this examination, in which the subjects taken are English and arithmetic. In making the selection the head teachers, both of the central and of the contributory schools, are consulted, and each possible candidate is interviewed by the inspector and the head teacher of the central school. At the interview not only are the marks gained at the

<sup>1</sup> From a paper by Mr. E. J. Sainsbury, B.A., read on April 2nd, 1918, at the Cambridge Conference of the National Union of Teachers.

scholarship examination considered, but also the child's school record, as well as his fitness and suitability for transfer to a central school.

Lately the practice has obtained, with advantage, of giving more weight to the recommendations of the head teacher of the contributory school, and this practice should without doubt be still further extended, for it is obvious that some children well fitted to benefit by more advanced education at a central school do not from various reasons do full justice to their intellectual powers at a set examination restricted to two subjects; and as some children are late in developing their mental powers, the head teacher and his staff are able to judge of their capacity, and of their effective industry, better than can be done by examination. The children admitted to schools with an industrial bias have their special aptitude in drawing and handwork considered with more care than the others.

From the list of "possibles" the district inspector then prepares a list of pupils recommended for transfer, classified according to his estimate of their suitability, and these names are submitted to a special selection committee attached to each central school. This committee then decides upon those who are to be transferred.

Before the child is admitted to the central school, the parent has to signify his assent to the transfer, and is also required to sign an undertaking that the child shall complete the school course. In practice, however, this undertaking does not always prove effective, and many children leave when they have attained the age of fourteen years, or soon after.

On the whole the method of selection works well, although unevenly on occasion, as may be supposed, but the children admitted are generally of a good type intellectually, and capable of deriving real benefit from the advanced teaching. It would, however, be an advantage if all entrants could be medically examined, with the view of finding out their physical fitness and their ability to stand the strain of the somewhat intensive course they have to go through.

The submission of pupils for admission is compulsory in the case of council schools, but voluntary on the part of managers of non-provided schools. The result is that most of those admitted come from the former type of school. The numbers from the latter schools, however, although very small at first, are increasing satisfactorily.

**EXHIBITIONS.**—As an inducement to parents to retain their children at the central schools as long as possible, a system of exhibitions was established. The exhibitions amount in the aggregate to £7,500 a year. The money is annually divided among the schools according to the number of pupils eligible in that year. With one exception the exhibitions are all of the value of £1 per month—the scheme having been recently revised. The exception is designed to cover travelling expenses only, to and from school, for in London travelling is frequently a not unimportant item of expense. The exhibitions are tenable during attendance at school after the pupil reaches the age of fourteen.

**SCOPE AND AIM OF THE COURSE.**—The period of the central-school course is four years. The aim is to give an extended and practical training to the selected

pupils, who can stay at school until they reach the age of "fifteen plus," so that they may on leaving school readily adapt themselves, their knowledge, and their skill to the office, the warehouse, or the bench. Suitable training for their future occupations is provided, on one hand by the schools with a commercial bias, and on the other by those with an industrial bias. In addition, the general education of the pupils is advanced, and careful regard is paid to their physical development and to such training as will equip them for life as well as for livelihood. Hence the curriculum includes Scripture, English (comprising also geography and history), mathematics, science, drawing, handicraft, physical exercises (including swimming and games), and singing; also in schools with a commercial bias a foreign language (usually French) and commercial subjects—shorthand, the principles of book-keeping, and typewriting.

No attempt is made on one hand to teach any special trade, or on the other to specialise for any particular branch of office work.

**HOURS FOR TEACHING CERTAIN SUBJECTS.**—Rather stringent regulations were drawn up by the education authority for the allocation of the time to certain subjects in the curriculum, and these are generally still operative; but in the other subjects the head teacher has liberty to arrange his curriculum as he wishes. In schools and classes with a commercial bias, at least four hours per week must be devoted to a modern language throughout the whole school course. Two hours per week must be devoted to drawing (including geometry), and the same time must be given in the first two years to laboratory work in experimental science. This last, however, becomes an optional subject in the third and fourth years as regards both the subject itself and the time allocated to it. For the first two years all boys must attend, for one session per week, instruction in handicraft; and all girls, for a similar time, practical work in domestic subjects for the first three years. Instruction in the definitely technical or specialised subjects is deferred until the third and fourth years, when at least one and a half hours per week must be given to shorthand and at least one hour to the principles of book-keeping. Typewriting is taken outside the ordinary school hours.

In schools with an industrial bias from ten to twelve hours per week are devoted to practical work during the whole of the four years' course. A modern language was not introduced into the curriculum of these schools at first, but now some schools with an industrial bias have included a modern language in their curriculum. The minimum time given to this subject must, under the council's regulations, be three hours per week in such schools.

**PROSPECTS OF PUPILS.**—Little difficulty was experienced, even in normal times, in obtaining good employment for all who completed their full course, wages much in excess of those obtainable by pupils from the ordinary schools, while large numbers of the boys are able to proceed direct from school into the Civil Service by passing the examination for temporary boy clerks.

Pupils trained under the industrial bias are readily accepted as apprentices by good engineering firms, or

by competitive examination, they frequently pass as trade lads into the Royal Arsenal at Woolwich, or as boy artificers into the Royal Navy.

A very large proportion of the pupils who complete their full course proceed, on leaving school and entering on employment, to the evening commercial institutes or polytechnics, where they continue the specialised work begun in the day school, both commercial and industrial, with the result that their services are in great demand by employers, and it may thus fairly be claimed that the central schools have fully justified the expectations formed of them at their inception.

### TEACHERS AND THE FUTURE OF ENGLISH ELEMENTARY EDUCATION.<sup>1</sup>

ENGLISH men and women have to-day to make up their minds what they wish the children to be taught, and then to leave to the members of the teaching profession the carrying out of their ideas. The teaching profession is therefore of paramount importance, and the men and women who belong to it have the great responsibility of guiding and training the young people of this country so that they may be ready for their great task. There is a serious shortage of both masters and mistresses now, and, as it takes at least five years to train a teacher, this shortage is likely to be felt for many years. Mr. Fisher has foreseen this, and has tried to help, by means of special supplementary grants, to make the teaching profession more attractive from the money point of view. Some 20,000 men have been withdrawn, from the total of 36,827, to serve with our armies in the field, more than 1,000 of whom have made the great sacrifice, and it is obvious that it will be many years before the gaps caused by their removal will be filled.

As regards the women, the war has opened out to them many other fields of endeavour than teaching, which was, with the exception of medicine, the only profession which offered a career to women before the war, and thus it attracted many intelligent women who were not particularly fond of teaching, but adopted it as offering a means of livelihood. The status of the teaching profession must be raised if it is now to attract any large number of gifted men and women, and the conditions of work must be of such a character as to offer to them scope for individuality and development. What prospect has it offered in the past? A life of strenuous and exhausting work, in many cases few opportunities of social and intellectual development, and often a meagre salary, together with criticism by all and sundry. We learn from a return published by the Board of Education in November last that, out of 36,827 certificated men teachers, 2,639 receive less than £100 per annum and twenty-five less than £65 per annum; and out of 77,139 certificated women teachers, 32,314 receive less than £100 per annum and 566 less than £65 per annum.

It is absolutely impossible for teachers receiving such salaries to be contented and happy, and their

work must suffer because of the lack of opportunities for development. In "Unto this Last" Ruskin showed how the character of the good employer was reflected in the workpeople, and if the new educational era is to be the success to which we all look forward it is indisputable that the work of teaching must be in the hands of a contented staff of teachers. It should be remembered that Mr. Fisher's dictum is correct: "Education does not raise discontent, it heals it," and the work of teachers, who are dealing with thousands of young people, is of tremendous importance in the formation of the national character. Many of our teacher women, among a large number of others, will have the vote at the next General Election, and when this great achievement is finally gained the nation will realise what a valuable asset women's influence will be in the future development and rebuilding on the ruins of civilisation brought about by this awful war. Women teachers will have a unique opportunity and advantage in helping to show women how to use the vote so as to utilise the brain work, hand work, and devotion of their sex to promote the best interests of the nation as a whole.

In England, there are great opportunities of usefulness unfolding for women of all classes, and particularly with regard to education. Many education committees have had only one, two, or three women as members, though the greater part of their work deals with women. In America, women have, within the last few years, advanced to the highest administrative positions in the educational service, and in 1914 there were more than 500 women county superintendents in the United States, nearly double the number which had been so recognised ten years earlier. Also in some parts of the United States—as in New York—the principle of equal pay has been conceded, but in this country the differentiation between the salaries of men and women has shown a tendency to increase, though that is to some extent counteracted by Mr. Fisher's declaration of minimum salaries, which gives a proportion of nine-tenths to the women. On the Departmental Committee of eighteen set up by the Board of Education to report on the salaries of elementary-school teachers there were only four women members, our own union appointing one of the four representatives. Notwithstanding all this, the professional position of women has improved steadily, though that improvement has not, as a rule, been followed by a corresponding improvement in remuneration. A wider appreciation of their work in an advisory capacity is increasingly apparent, though there are still many people who fail to take them into their councils.

The ideal teacher is rare, and I claim that such a personality is discovered among women in quite as great a proportion as among men. To be able to get inside the mind of every member of her class and to know how to quicken the interest of each child is only attained by men and women possessing a highly developed imaginative faculty, quick instinct, and a sense of subtle atmosphere. A teacher who is a child lover, and instinctively knows as soon as she enters a room the mood of the class before her, will never experience the slightest difficulty in managing children, or in awakening and holding their interest.

<sup>1</sup> From the presidential address delivered by Miss E. R. Conway, M.A., on April 1st, 1918, at the National Union of Teachers Annual Conference at Cambridge.

The supplementary grant—the Fisher money—is actually being used by the authorities in London and some other localities to make the differentiation between the men's and women's salaries greater than in the past, and I tell them plainly that this is a retrograde step and will result in disaster. Surely the supplementary grant should be shared out on an equal basis as between men and women teachers of equal service, and rates of increment in the new salary scales should be equal for men and women. The lower standard of pay means a lower standard of living, and gradually but surely results in many cases in the undermining of the health of the woman teacher.

The day continuation schools for children from fourteen to eighteen contemplated in the Bill will require to be staffed with men and women of broad and sympathetic outlook with a wide academic and professional training. It would be a great gain if these schools could be arranged in connection with the school attended by the pupils up to fourteen years of age, for the teachers have established community of interest with their pupils, and acquired considerable knowledge of the individual characteristics of each, so that they would start with advantage the education for the limited period of 320 hours contemplated in the new Bill. I trust that women teachers will play an active part in this new work, and their beneficent influence over the boys and girls be continued. It is particularly necessary that the girls should come under the influence of capable, cultured women during this period, and it would be helpful if some instruction in domestic subjects were included in the curriculum of all such schools. We, as practical teachers, hope ardently for the passing of the Fisher Bill, which is to free the child slaves in our land and give them a chance of profiting by the education given in the primary schools.

There is a new and refreshing enthusiasm for education observable, and many men—imbued with a spirit of patriotism—are visualising a new England which shall grow triumphantly out of the existing chaos. Many workers will co-operate in this desirable end: the city councillor, who plans a country suburb on the hills round his city with clean, well-planned, convenient houses, with beautiful schools and churches, connected by cheap trams with the centre of the industry, so that the workers may easily get to and from their factories; the large employer of labour, who advocates a six hours' working day, so that the workers may have leisure for self-improvement and rational recreation; and the teachers, who will be in the future the leaders and colleagues of the democracy among whom they live and work. I dream of a good time coming, when all classes in our beloved country will have learnt that it is only by whole-hearted co-operation and enthusiasm for social service that we shall realise our ideals. That co-operation has, on the whole, resulted in our wonderful organisation for this terrible war. Surely it is possible to secure an even more efficient co-operation in the interests of reconstruction when peace smiles upon us once more! Then we shall remember that it is not only in educational efficiency and in commercial and industrial supremacy that we shall maintain the greatness of Britain.

We want our people to realise that if our children are to grow up and be the men and women who are to labour for this ideal, they must be imbued with the spirit of Christianity and know and love their Bibles, realising the lesson voiced by the Psalmist of old:—"O send out Thy light and Thy truth, that they may lead me: and bring me unto Thy holy hill, and to Thy dwelling." We hope that in any scheme of education adopted will be included the training to think on "whatsoever things are true, whatsoever things are honourable, whatsoever things are just, whatsoever things are pure, whatsoever things are lovely, whatsoever things are of good report." The Sermon on the Mount is a better guide for conduct than any theories of German philosophers, and in the future development of education our England must see that the religious teaching given by teachers who realise their great responsibility is an integral part. There is no religious difficulty inside the schools, and we trust that nothing will be done in the future either to introduce that difficulty or to interfere with the teachers, who are proud of the trust committed to them and are the proper persons to discharge that trust. England will never again allow it to be said that "the theologian blocks the way of progress," and I trust that extremists on all sides will be content to leave this vital matter in our hands. Let us for our part try to deserve the tribute which Matthew Arnold paid to his father, the great schoolmaster:—

"Yes, I believe that there lived  
Others like thee in the past,  
Not like the men of the crowd,  
Who all around me to-day  
Bluster and cringe and make life  
Hideous and arid and vile,  
But souls tempered with fire,  
Fervent, heroic, and good,  
Helpers and friends of mankind,  
Servants of God, or sons  
Shall I not call you? because  
Not as servants ye knew  
Your Father's innermost mind:  
His, who unwillingly sees  
One of His little ones lost—  
Yours is the praise, if mankind  
Hath not as yet in its march  
Fainted, and fallen, and died!"

#### THE EASTER CONFERENCE OF THE NATIONAL UNION OF TEACHERS.

NOTWITHSTANDING the fact that the shadow of the war lay heavily upon the proceedings of the Cambridge Conference—few members but had the heavy strain of apprehension to bear, and not a few being called away by sad news from the war area—it was one of the most successful in the history of the N.U.T., both in relation to the amount of business negotiated and in the importance of the decisions arrived at. A noteworthy feature of the reception of deputations lay in the fact that for the first time a single representative, Mr. John Strong, president of the Educational Institute of Scotland, was able to speak for all grades of the teaching profession in Scotland by reason of the recent union of the Secondary Education Association, the Educational Institute of Scotland, and the Class

Teachers' Federation. The announcement of Mr. Strong that the union had hitherto proved remarkably successful was greeted with much applause.

**THE EDUCATION BILL.**—A simple resolution of welcome to the new Bill, and an urgent plea that it should be placed upon the Statute-book during the present session, constituted the contribution of the conference to the efficiency of Mr. Fisher's scheme of reform. Very strong cases were made out for the more generous treatment of necessitous areas, and for compulsory secondary and university education, but the feeling of the members was quite decided as to the inadvisability of adopting amendments, however desirable, which would tend to obstruct the expeditious passage of the Bill in Committee. It was unanimously decided by the conference, however, to urge upon Parliament and public bodies concerned that, in all cases where primary- and secondary-school teachers can be shown to have suffered loss of appointment or salary through legislative or administrative changes, they shall receive proportionate compensation.

**EQUAL PAY FOR EQUAL WORK.**—The case for equal salaries for men and women teachers possessing equal professional qualifications and performing similar school duties was clearly presented by the Manchester representatives, Miss McCulloch and Miss Sweeney. The amendment moved by Mr. W. H. Young, of Liverpool, stressed the contention that the result of equal salaries would inevitably cause a lowering of the status of men teachers who had greater economic responsibilities to meet. It was pointed out during the debate that the most enthusiastic advocates of the equal payment principle were the young women teachers, and further, that it was unjust to come to a decision upon the matter when so many men teachers were absent on active service. Mr. Young's amendment was carried by a substantial majority, 42,757 votes being cast in its favour and 26,040 against. A proposal to take a referendum upon the question in order to reach a definite decision was finally passed unanimously.

**THE UNION AND THE LABOUR PARTY.**—The result of the referendum on the proposal for the alliance of the union with the Labour Party showed a majority of 14,309 votes against such a course being taken, the poll giving 29,743 members against and 15,434 in favour. The position has been exhaustively discussed by the local associations during the year, and so strong is the collective feeling of the profession against identification with politics and political parties that proposals to ally with any other such parties would doubtless have been rejected by majorities equally decisive.

**THE NEW STANDARD SCALES OF SALARIES.**—The new rates of salaries approved by the conference lay down a minimum rate of £100 per annum in the case of provincial class-teachers, and of £120 for teachers working in the metropolitan areas. The annual increment is £12 10s., and the maximum in the case of men is £350, and in that of women £300. A strong point in favour of the new scales lies in the fact that for a long series of years, from fourteen to sixteen, equal payments are laid down for men and women, the differentiation in favour of men at the close of these periods being designed to relieve the

economic pressure which would normally be imposed by the burden of a growing family. The terms of the new salary scales will presumably have an important influence upon the result of the referendum which is to be taken. The scale of salaries for assistant-masters in secondary schools as formulated by the Secondary-schools Committee of the union is a minimum of £200 per annum, proceeding by annual increments of £20 to a maximum of £500, and in the case of special responsibility to £600. For assistant-mistresses the minimum is fixed at £180 per annum, with annual increments of £15 to a maximum of £400, and in the case of special responsibility to £500.

**THE GROWING ASCENDANCY OF THE NORTH.**—One of the outstanding features of the conference meetings was the prominent part taken in the various debates by representatives from the North. Lancashire was exceptionally well represented, apart from the fact that two Lancashire teachers, Miss Conway and Mr. H. Pearson, occupy the offices of president and vice-president respectively. The steady growth of unionism in the County Palatine has caused the County Teachers' Association to become the corner-stone of the National Union, and on this account the county will, next year, return an additional member to the Executive Board.

**THE INCREASE OF SUBSCRIPTION.**—The proposal to increase the annual subscription to the union from 12s. to 21s. was agreed to without discussion. The major portion of this fee will be devoted to the foundation of a Professional Sustentation Fund, the lack of which has frequently prevented the union from securing full protection for those of its members who have been borne down by insufficient rates of salary and onerous conditions of service.

## ITEMS OF INTEREST.

### GENERAL.

The Board of Education's Circular 1,036 bears upon the question of training colleges for teachers in elementary and in secondary schools. The Circular is meant to remove an anomaly in the system of training, but it cannot be said to achieve complete success. Under present regulations a student in an elementary training college, provided his academic qualification is suitable, may, and in a large proportion of cases does, obtain appointment to a secondary school, notwithstanding that his professional training has been entirely on elementary-school lines. The elementary training college thus competes on unequal terms with the secondary training college, which prepares definitely for secondary-school work, but which is at a great disadvantage in the matter of Government grants. The new Circular allows the elementary training college to modify its programme of professional training in the case of individual students who desire to teach in some type of school other than an elementary school, and in the case of students who have obtained an honours degree a specialised course for higher school work is to be allowed. The position of the elementary training college is thus to a certain extent regularised. But unless the finances of secondary colleges and departments are placed on a different

footing, their plight would seem to be worse than ever. The just solution is surely to place all recognised colleges, whether elementary or secondary, in the same position as regards grants from the Board of Education.

THE Board of Education's Circular 1,041 will have an important effect upon the finances of training colleges, the rates of grant payable to those institutions having been entirely recast. As regards two-year and three-year students in elementary training colleges, the grant for instruction is raised from £13 to £20, whilst the grant for maintenance in a college or hostel is increased by £3 in the case of women and diminished by £5 in the case of men—an indefensible discrimination against women being thus partly removed. The personal grants for day students are reduced by £5, but on the understanding that the college fee is to be reduced by £5, so that the college retains only £2 out of the £7 increase in respect of these students. The maintenance grants for four-year students are to be raised, with the result that the grants for these students will be identical with the grants for other students in elementary training colleges. The instruction grant for students in secondary training colleges is raised from £18 to £20, and a maintenance grant is to be paid, provided the student has obtained a university degree in honours. As a temporary expedient, subject to revision after the war, the grant for students in training schools of domestic subjects is raised from £9 to £20, and maintenance grants are also to be paid. The Board adds that the college authorities should, in applying the augmented grants, have due regard to the predominant importance of adequate salaries for the teaching staff. It was indeed high time that the salaries of training-college lecturers should receive attention, if the colleges are to attract the right kind of people for the important work they undertake.

ARRANGEMENTS have now been completed for setting up the register of Parliamentary electors of the University of Cambridge under the provisions of the Franchise Act of 1918. The Registry of the University desires to make it known to graduates who are not already on the register as members of the Senate, including bachelors (who became full bachelors in the December of the year in which they were admitted to their degrees), that they are entitled to be placed on the register. Forms for making the necessary claim for the purpose will be sent on application to the Registry at the Registry of the University.

AT the annual meeting of the Associated Chambers of Commerce held on April 9th and 10th a motion was passed urging the Government to pass into law the Decimal Coinage Bill prepared by the Executive Council of the Associated Chambers of Commerce in conjunction with the Institute of Bankers and the Decimal Association. It is understood that Lord Southwark will introduce the Bill into Parliament at the earliest possible moment, and it is therefore incumbent upon everyone interested in decimal coinage to strengthen the hands of the Executive Committee

in order to demonstrate that the weight of public opinion is behind the movement.

AN interesting pamphlet on "Health Essentials for School Children" has been issued by the Joint Committee on Health Problems in Education of the (American) National Education Association and of the American Medical Association—comparable, we suppose, with a joint committee of, say, the Teachers' Guild and the British Medical Association. The remarkable fact is revealed that in America children attending rural schools are, on the average, less healthy, and are handicapped by more physical defects, than the children of the cities, including all the children of the slums. This appears to be generally true of all parts of the United States. A tabulated statement of health work in the city and rural schools of the United States is worth inspection by our own "grousers." It appears, for example, that there is dental inspection of city children only in sixty-nine cities, and that for country children dental inspection is permitted only in two States, but is not yet provided even in them. There are dental clinics in fifty cities and only in one rural county in the whole of the United States. Open-air classes exist in cities only. The rural children appear to lose more by neglect than they gain by the fresh air and other hygienic advantages of country life. The object of the Joint Committee's pamphlet is to press the claims of these children.

WE gladly direct attention to the report of the Sixth Annual Conference of Educational Associations, held at University College in January last. The reports of these annual conferences may in future very well be regarded as regular milestones on the educational road, so explicitly do they place on record the ideas and movements which are uppermost in men's minds at the times of their appearance. The present report compares very well with its predecessors in point of interest and importance. Many who were present at the conferences, and perhaps more who were not, will be glad to have in permanent form Sir John McClure's genial and statesmanlike presidential address, Mr. Lowes Dickinson's discourse on "The Educational Basis of Internationalism," Prof. Gilbert Murray's address to the Teachers' Guild on "The Education of a Gentleman," and the Rev. W. Blackshaw's excellent paper on "Universities and Welfare Work"—not to speak of many other valuable contributions. The report is issued at 2s., and can be had for 2s. 6d. post free from the Hon. Treasurer of the Conference, 9 Brunswick Square, London, W.C.1.

THE April issue of the *English Review* gives particulars of a competition for a prize of 100*l.* for an original essay on President Wilson's policy, a League of Nations, treated historically and humanly—human nature being what it is. The essay must be not shorter than 4,000 and not longer than 7,000 words. It must be written in English. Essays should be sent in with as little delay as possible, and not later than June 1st. The award will be announced on July 1st and will be made by a jury including the Master of Balliol, Lord Parmoor, General Sir Ian Hamilton, Mr. John Galsworthy, Mr. H. G. Wells, Prof. C. W. C. Oman, and the Editor of the *English Review*.

In the *Nineteenth Century and After* for April there appears an able article by Mr. Cloutesley Brereton entitled "A Defence of the Modern Humanities." The essay is substantially a criticism of an article in the same review by Mr. Cyril E. Robinson defending the present system of specialisation in classics at the public schools. Mr. Robinson had laid the main stress on the importance in "training to think," and claims that this is given better by classics than by any other school subject. He rejects the idea that the subject-matter of the classics is of value for boys under seventeen. Mr. Brereton's article is marked by breadth of view and by insight into the real intellectual needs of boys, and supplies on most points a convincing answer to Mr. Robinson's contentions. He scores heavily in replying to the latter's remark that "there are real grounds for doubting whether the requisite standard of literary taste or the adequate form of literary exposition could be at all developed in the normal university student who becomes a public-school master." Mr. Brereton comments thus:—"If this be true, could any more damning indictment be found of the system which Mr. Robinson desires to see maintained?" One point in Mr. Robinson's paper which perhaps needs a fuller reply is the argument that Latin and Greek translation affords the easiest mechanism for ensuring thinking and for checking and correcting it. One would like to see a detailed example by Mr. Brereton showing how this could be done (as surely it could) through the medium of French.

THE results of an inquiry into the favourite books of 40 children between five and twelve years of age are given in the *Parents' Review* for March. The prime favourite, "Robinson Crusoe," received twenty-eight votes—3 per cent. "Black Beauty," "Coral Island," "Little Women," and "Treasure Island" were the next favourites, the last of them receiving fifteen votes. The twenty most popular books only received 237 votes between them—a most surprising result. No. 20, "Tom Brown's School-days," had six votes. Speaking generally, the chief favourites are the older books; "Robinson Crusoe" had more boy readers, and "Black Beauty" was a girls' favourite. A boy of ten described "Treasure Island" as a "McNiversant Book." The author appends in a footnote a list of the first twelve favourites, between the ages of seven and fourteen. "Alice in Wonderland," first on this list, was seventh on the other; "Robinson Crusoe" comes sixth, and "Treasure Island" twelfth on the list for the older children.

In the *Child* for April is a brief description by "Minobi," the Head Chief of the Camp Fire Girls of Great Britain, of an evening round a camp fire which glowed in a circular clearing in a young larch wood. One of the rites was the acting of a scene from Kipling's "Jungle Book," in which Mowgli, with the Red Flower, leaves the jungle and goes back to his people. The whole episode was a quaint mixture of Red Indian activities with the tribal tattoo and of Eastern customs when the storyteller sat cross-legged on a reed mat. But these trimmings serve to whet the enthusiasm of the girl members for a society of

which the members, on initiation, promise "to follow the outdoor trail as long as life lasts." The elder girls of a secondary school, to whom the robuster practices of the Girl Guides do not appeal, might find in the Camp Fire movement a stimulus towards the same ends—i.e. to keep physically fit, to help all in need, and to live and think cleanly, etc. The address of the Head Chief is Havenholme, King's Langley, Herts.

MISS G. WILLARD recounts in the *Education Gazette* for New South Wales her experiences in different types of Australian schools, from the point of view of "Home, Environment, School: their Relationship and Interdependence." At Broken Hill, in an environment of sand stretches, dust-coloured streets, lines of dumps and surface works, poor homes and narrow ideas, with an impatience of authority as the prevalent tone of the adult population, the children were regular, punctual, and keen to learn, and the parents were anxious to help. At Mudgea, a quiet country school, the children lacked initiative. In dingy city schools it was found that each school had its own particular problem, and as a result of twelve years' experience Miss Willard advocates that teachers should never stay too long at one school. "Sympathy and understanding of child nature are worth more to a teacher than a university degree." The whole article is worth attention, as it shows that the schools "down under" present very much the same sort of problems as those at home.

IT is announced in the *Educational Review* (Madras) that the Government of India has invited the opinions of local Governments with reference to the proposed reorganisation of the Indian Education Department. The immediate aim of the proposals, which are to be reviewed by the provincial authorities, is to carry Indian education over the present transition stage from the past, when education was largely in the hands of Europeans, to the future, when the reverse will be the case. It is desired that the critics should remember that one possible future development is the extension of teaching universities, to which are attached a number of specialist professors who will maintain a high standard of teaching as a result of their scholarship and experience. Many of the details of the proposals deal with the scheme of salaries to be paid to the European and native members of the reorganised service.

THE Cape of Good Hope Education Department used to keep a card index record of the results of the official examinations; in the early 'nineties the cards numbered 400 a year; now the index is growing at the rate of 15,000 cards a year, and the authority proposes to substitute a "loose-leaf" system—one leaf per person. The Department, therefore, desires teachers and others to send in a return of their past examination successes in order that the new scheme may faithfully record the examinations passed by the teachers. In effect, the new proposal is tantamount to a register of teachers, since the Department is the examining body for the Cape, and registers the certificates obtained in other countries by members of the teaching service.

PROF. PAUL S. LOMAX, who acted as chairman of the Commercial Education Surveys of Missouri and New Mexico, recounts some of the most significant results of the surveys in the *School Review* of Chicago for February. More than half the teachers were graduates of a normal school, college, or university, and not a single commercial teacher had received a college or university course in the teaching of accounting or stenography, the two traditional commercial subjects. The machinery equipment of the schools consisted almost entirely of typewriters and pencil sharpeners; the school libraries were deplorably weak. The commercial departments of schools were business offices for training pupils in the routine of business rather than classrooms. The schools fail in their first necessity, i.e. to teach the principles of business.

#### SCOTTISH.

PROF. BURNET, St. Andrews University, in the course of an address to the teachers of Perthshire, said that certain bodies had been passing resolutions protesting against the Education Bill as "inopportune during war conditions." He wondered what sort of dreamland these people had been living in during the past four years. War was a harsh but effective schoolmaster. Its fees were high and had to be paid in blood and tears. The lesson it taught during these years was that education was our best defence, both for war and peace. The boys at the front had learned this lesson, and lecturers coming back from the seat of war declared that the young men out there were intensely interested in the education proposals and asked no end of questions regarding them. Yet some Rip van Winkles at home mumble that the Bill is "premature." Prof. Burnet said that his only fear was that it might be too late. They were in danger of being left behind in Scotland. England had been making up on them steadily during the past fifteen years, and was already ahead of Scotland in some fields. There was a tremendous educational ferment going on south of the Tweed, as was evidenced by the reports in every educational journal. Scotland must wake up and put her educational house in order or be content to march in the rear instead of in the van as hitherto.

THE Secretary for Scotland during the Easter recess had a busy time listening to various delegations in connection with the Education Bill. Mr. Adam Nimmo, on behalf of the coalmasters, declared it was practically impossible to allow lads to attend part-time day classes without dislocating the whole work of the mines. The Labour members of school boards opposed both the area and the authority proposed in the Bill. The county area, they contended, was much too large and absolutely impossible for democratic control and administration. They suggested that special administrative areas should be delimited round each secondary school. Mr. Munro made short work of this recommendation by pointing out that it would leave large areas of Scotland wholly without educational facilities. He further pointed out that the small representation of Labour on the existing education authorities was not a high tribute to their democratic character.

A BEQUEST has been made to Glasgow University by the late Mr. W. B. Faulds of a sum of money sufficient to provide four research fellowships of the value of £200 each, tenable for three years. They are assigned to the faculties of arts, law, medicine, and theology respectively. In the award of these fellowships it is provided that the following factors will be taken into consideration: academic record, capacity for independent investigation as shown by past record or by published or unpublished works, and, if deemed necessary, examination. The researches must be carried on under the guidance of a professor or lecturer, and, if so required, elsewhere than in Glasgow, during one of the years of tenure. The fellows must not engage in professional work or practice unless approved as expedient in the interests of their researches.

THE Department, in response to various inquiries, has issued a memorandum stating that the grant in aid of teachers' salaries will be continued on a scale not less than that of last year. School boards and managers are urged to continue the payment of teachers' salaries at the enhanced rate rendered possible by this year's grant. This reminder is very timely, as some school boards have refused to regard the increased payments that have been made as additions to salary, and have sought to safeguard themselves against future responsibility for them by calling them bonuses. This exhibition of mistrust and small-mindedness is characteristic of the whole outlook of these parochial bodies.

MR. E. W. CURRIE, M.P., in a communication to the Leith School Board, states in a fresh and striking manner the case against the *ad hoc* authority for education. The inability of school boards to control the environment of their pupils has led to deplorable and scandalous health conditions in many school children. The bare and discreditable facts revealed in Dr. Leslie Mackenzie's recent report are a disgrace to the nation and a grave reflection on the school-board system, which utterly fails to realise or visualise the situation. Mr. Currie draws a distinction between election *ad hoc* and administration *ad hoc*. The Bill provides for the latter, but not for the former, and if there is any virtue in the principle it should still find plenty of scope for its operations.

THE annual report of the Carnegie United Kingdom Trust reveals the ever-widening scope of the committee's activities. The rural library scheme, which is meant to supplement and extend the school and village libraries founded by the late Mr. Coats, is making good progress. Infant welfare centres, play centres, central institutes, and hostels in connection with secondary schools are further beneficent forms of the trust's operations. Stornoway and Portree have been selected as centres for experimental hostels, and certainly no better sites could be selected, as the secondary schools there are largely recruited from the outlying districts. The report gives also interesting particulars of the trust's endeavours to minister to the æsthetic needs of the nation by the encouragement of music and art.

THE School Board of Glasgow has given a splendid lead to the rest of the country on the salary question. By an almost unanimous vote it has accepted the principles of the Craik report and adopted them with some slight modifications for the various grades of teachers in its service. Certificated masters, £110 to £250, by annual increments of £10; second masters, £250 to £300, by £10 increments; headmasters, £350 to £550, by £20 per annum; certificated mistresses, £90 to £180; graduates, £100 to £200, by annual increments of £5 for six years, and thereafter by £10; infant mistresses, £200 to £300; headmasters of intermediate schools, £575 to £625, by £20 annually; headmasters of secondary schools, £575 to £750; headmaster of high school, £800 to £1,000.

#### IRISH.

THE Department of Agriculture and Technical Instruction has issued its new programme of science, drawing, manual instruction, and domestic economy for day secondary schools for the session 1918-19. This programme marks a new departure in the teaching of these subjects. The work of the Department has, on the whole, proceeded on the same lines for the last seventeen years, ever since it took up the science and drawing instruction in secondary schools. The changes are stated to be due to the need for better courses of science as preparation for the university, to the abolition of the preparatory grade by the Intermediate Board, which thus does away with the necessity for set syllabuses for pupils of the age formerly taking an examination in that grade, and also to a desire to co-ordinate the Department's courses with the Intermediate grades. The new syllabus does effect a complete and adequate change in the preparatory-grade classes and in co-ordinating the Department's work with that of the Intermediate Board, but it has not been so successful in providing what it calls a general course in physical science in place of the former special courses.

THE Department claims to have discussed the syllabuses of instruction fully with representative committees of heads of secondary schools, but, in spite of this, it has not arrived at a satisfactory solution; for in the third and fourth years schools are not allowed to take the whole course unless they give five hours per week to science, but are restricted to one of the two sections, viz. physics or chemistry in physical science, and botany or hygiene in natural science. In other words, unless a pupil can give five hours a week to the subject he is restricted to specialisation, when surely it is just this pupil, who is specialising, say, in classics or modern languages, and desirous of learning science but unable to give five hours a week to it, who ought to get a general science course. Here is the weak point of the scheme, and it ought not to be beyond the power of the Department to provide a general course in science for pupils who cannot give more than three hours a week to it. Or does the Department wish such pupils not to learn science?

THE main changes in the programme are the elimination of experimental science as an obligatory

subject in the first year; the abolition of special courses and the substitution of a general course either in physical science or in natural science; and the correlation of the courses with the grades of the intermediate programme. Drawing is obligatory in the first year, together with one other of three subjects: elementary science, manual instruction, and domestic economy. The teaching methods become also more elastic, and more demonstration work is encouraged. The rates of payment are changed in form but not largely in amounts, those for first- and second-year science being slightly lessened, and those for drawing slightly increased.

THE new grant of £50,000 was distributed among Irish secondary schools by the Intermediate Board at the end of March. As the distribution was necessarily hurried, there was no time to reconsider the rules which had been laid before Parliament and debated in the House of Commons, but there will probably be little complaint as to this year's actual distribution. Before next year there will be the present year's experience to go upon, and also we may expect the report of the proposed Government inquiry into the salaries of secondary-school teachers. It is to be hoped that this inquiry will be held soon and will report quickly. The Intermediate Board has issued a notice that the next distribution of the teachers' salaries grant (the Birrell Grant) will be in accordance with revised rules designed to carry out the objects for which it was originally voted by Parliament.

THE president of University College, Cork, states in his report that the number of students attending the college during the session 1916-17 was 486, as against 422 in 1915-16. The number of new students was 164. The total number exceeds that of any previous year by sixty, and is more than eighty above the highest total prior to the passing of the Universities Act of 1908. The question has again been raised of constituting the college at Cork a separate university. There is much to be said for this proposal, but it cannot be carried out without an entire modification of the Universities Act, as the University College in Dublin would claim the same treatment and status as that in Cork.

THE Department has published the second number of its *Journal* for this year. It contains a full report of the meeting of the Council of Agriculture last November and the Vice-President's address verbatim. As is to be expected, the volume deals almost entirely with agriculture and food questions.

#### WELSH.

THE prospects of the Education Bill are being anxiously canvassed at the moment of writing. The military crisis, the Irish question, and other important controversial matters engaging the attention of Parliament give rise to grave fears as to its chances at the Committee stage. Many peculiarly Welsh interests are involved, and a conference of teachers' associations and others concerned with educational matters has been held at Cardiff to arrange for a public meeting to urge on the Government the importance of getting the Bill placed on the Statute-book.

IN the debate on the second reading Major David Davies pointed out that Ireland was specifically excluded from the operation of the Bill, while Scotland was promoting a Bill of its own. The differences in the English and Welsh systems of education called for separate provisions for Wales, with a Welsh Education Office dealing with Welsh affairs, as the Scotch Education Department did with Scottish affairs.

THE executive of the Welsh National Conference met at Shrewsbury on April 22nd to consider the replies of local education authorities to the proposals of the conference, the University Commission Report, and the Education Bill. In view of the recent progress of movements in favour of devolution, it was decided to hold a further session of the conference to consider the question of a National Council as part of a larger scheme of autonomy for Wales; and sub-committees were appointed to report on the Education Bill and the findings of the University Commission. The proposals of the conference have meanwhile been sent to Major Davies in the form of amendments to the Bill, to be laid before the Welsh Parliamentary Party for their support in the House.

THE Glamorgan County Council purposes to do more for the education of the adolescent than is required by Mr. Fisher's Bill. It is proposed to establish about forty "middle schools" in the county to receive such children between the ages of twelve and sixteen as do not go on from the elementary to the present intermediate or other secondary schools, which are to be reserved for those who can take a course of full-time education up to the age of at least eighteen, in preparation for the university or professional life. The new schools are to be secondary in curriculum, in spirit, and in discipline, but the work of the last two years is to have a definitely vocational bias, with a constant view to the development of good citizenship and of the power of orderly self-government; the schools are also to be centres of recreation and of many kinds of out-of-school activities. It is believed that such a scheme, providing full secondary education free of cost up to the age of sixteen, will be both more acceptable to parents whose children must earn their living as soon as possible, and more beneficial educationally than the system of 320 hours' compulsory attendance up to eighteen imposed by the Bill.

IT is a most attractive scheme, and is powerfully advocated in a pamphlet on "The Education of the Majority," by Miss E. P. Hughes. There are, however, serious practical difficulties in the way of its adoption in the near future. The children for whom the schools are to be provided number at least 70,000 in Glamorgan—more than three times as many as are in all the present secondary schools of Wales. Land, buildings, equipment, and teachers—especially the last—will be difficult to provide. Authorities are much too fond of imagining that they need only choose their candidates and put them through a definite set of processes in order to turn out any required number of satisfactory teachers. There will have to be a wider

field of selection, a more rigid choice, higher standards of aptitude and character, and better inducements for the best people to take up teaching as a career before a force of teachers can be raised capable of doing the work outlined in this scheme.

INQUIRIES among teachers and Labour leaders in South Wales do not give much encouragement to the proposal that teachers should in their associations affiliate with the Labour Party. The referendum to the members of the N.U.T. resulted in the rejection of the proposal by a large majority, and the like fate seems to await that of the I.A.A.M. The Labour Party wants the help of the "brain-workers," but only on the condition that the latter shall be in entire sympathy with the aims and programme of the party.

IN educational matters the teachers are thoroughly democratic; they believe in the best educational advantages being provided for all children who can use them, and in all obstacles being removed from their path. In this they are not prepared to give place to any class of reformers; but they include in their numbers men and women of every political colour, and a large proportion of them, while prepared to work with the Labour Party for educational ends, are decidedly not ready to accept the party's policy and methods in their entirety. They are not prepared to affiliate for the sake of the material advantages they might gain by doing so, and do not care to be treated either as creatures of the majority or as bourgeois spies in the party camp; they believe—with many of the Labour leaders whose opinions have been sought—that they can do the best service both to education and to the working-man by taking an independent stand as a self-respecting and self-governing profession, standing aside as such from party politics, and leaving their members free each to follow his own political convictions.

## EDUCATION A WORK OF NATIONAL IMPORTANCE.

*Brinsley's Ludus Literarius; or, The Grammar Schoole.* Edited by E. T. Campagnac. xxxvii+xxxviii+363 pp. (Liverpool: University Press; London: Constable.) 1os. 6d. net.

IF everyone who ought to read this book—namely, every schoolmaster in the country—would only do so, its publication would be an event of first-rate national importance. The war has already made us begin to suspect that there has been something wrong in the past, both in our education itself and in the attitude of the country at large towards it. Prof. Campagnac has therefore chosen an opportune moment for this reprint of Brinsley's work as a companion volume to his reprint of Hoole's "Art of Teaching Schoole," published in 1913. The best recognition of Prof. Campagnac's labours that we can make is to insist upon the importance of Brinsley's work; and so we will say no more here about the production of this reprint—which is excellent in every way—except to give a word of commendation to the very useful and careful bibliography which Prof. Campagnac has appended, and to thank him for the mighty, though very sober and

serious, clarion call to the recognition of the high seriousness of the schoolmaster's profession which his introduction contains.

After the revival of learning the greatest men of the day concerned themselves with education; men like Erasmus, Roger Ascham, Melancthon, Vives, Cordierius, and Comenius were followed in the sixteenth and seventeenth centuries by a race of humbler but no less earnest schoolmasters, of whom the best representatives were Charles Hoole and John Brinsley. Little is known of the details of the latter's life (he graduated at Cambridge in 1584-85), but we know from this book what sort of man he was. None could have a higher conception of the schoolmaster's calling. To Brinsley the teacher was Μουσῶν θεράπων καὶ ἄγγελος, as he prints on his title-page, together with the following quotations from Cicero, which we quote because they never needed taking to heart by a nation so much as they do to-day by England:—*Nullum minus reipublicae afferre maius melius possumus, quam si doceamus atque erudiamus iuventutem* (Cic. de Divin. 3), and *Quaerendi defatigatio turpis est, cum id quod queritur sit pulcherrimum* (de Fin. 2). In the same spirit Brinsley speaks in his introduction of "all good learning" as being the chief glory of a nation. Could there be a greater contrast to the low esteem in which education has been held in England during the last generation? "And just as disaster came upon Rome, so it is bound to come upon us, so long as Juvenal's words, "res nulla minoris constabit patri, quam filius," are applicable to us.

So much for the national importance of this reprint. We pass to its practical wisdom for schoolmasters. Brinsley was a man of tremendous patience and ingenuity, and this work (in form a dialogue between Spondeus and Philopomus) contains a full description of his methods from the most elementary details of the teaching of English spelling or the making of a pen (note that each scholar makes his own) up to the writing of Latin and Greek verses, and the sanity of his methods throughout is truly remarkable. Some classical masters to-day tell their pupils to put the verb last in a Latin sentence; Brinsley tells them to put the oblique cases first; and as an instance alike of his thoroughness and of his scholarship we will mention his advice to end up a sentence with a series of trochees. He approves of Roger Ascham's well-known retranslation idea, to which he adds the imitation of short letters of Cicero, which lead on to original Latin themes carefully composed after the model of the five divisions of a Ciceronian speech. Verses, too, must be taught through free composition at first; and all poetry is to be pronounced as prose, "not to be tuned foolishly or childishly after the manner of scanning a verse as the use of some is" (p. 213). Greek is taught on the same lines as Latin—note that accents are taught from the very beginning—i.e. on lines which direct-method teachers are to-day attempting to revive. We are inclined to forget that Latin has become a dead language only comparatively recently; our forefathers in the seventeenth century habitually spoke it in school, and when the master wanted his pupils to speak English he had to tell them to do so. "Dic Anglice," he would say, as we find the master doing in the actual examples of lessons which Brinsley gives.

The book contains many other matters—religious and moral training, school management, etc.—right down to the "discouragement of schoolmasters by the unthankfulness of parents"; but nothing is so important, in the practical aspect of the book, as the insistence upon the necessity of the constant oral practice of Latin, if we would have our scholars acquire a ready and lasting command of the language.

## BOOKS FOR THE TEACHER'S LIBRARY.

(1) *The Advanced Montessori Method.* By Maria Montessori. Vol. i., *Spontaneous Activity in Education.* 357 pp. Vol. ii., *The Montessori Elementary Material.* 455 pp. (Heinemann.) 8s. 6d. net and 12s. 6d. net respectively.

(2) *Self-Reliance.* By Dorothy Canfield Fisher. 243 pp. (Constable.) 4s. 6d. net.

(3) *An Adventure in Education.* By J. H. Simpson. 207 pp. (Sidgwick and Jackson.) 2s. 6d. net.

(4) *W. E. Ford: A Biography.* By J. D. Beresford and K. Richmond. 310 pp. (Collins.) 6s. net.

(5) *A Beginner's Psychology.* By E. B. Titchener. 362 pp. (New York: The Macmillan Co.) 6s. net.

(6) *The Book of School Games.* Edited by C. E. Hodges. 96 pp. (Evans.) 3s. 6d. net.

(7) *The Making of Women.* By A. Maude Royden and others. 217 pp. (Allen and Unwin.) 4s. 6d. net.

(8) *The Education of the South African Native.* By C. T. Loram. 340 pp. (Longmans.) 6s. 6d.

(1) ARDENT Montessorians, and others who wish to read the signs of the times in matters educational, will need no recommendation from us that they should turn to the two new volumes from Dr. Montessori's pen that have just been issued in an English translation. In the earlier books the author confined herself chiefly to the education of young children, but in these she carries on the subject to the education of children between seven and eleven years of age. The first volume is theoretical and the second practical. So far as the first is concerned, even those readers who differ much in principle from Dr. Montessori must needs confess that in many respects she is giving a powerful impetus to desirable reforms. She makes out a strong case for her declaration that the whole subject of school hygiene is in effect the accomplice of a social wrong. Minute directions, for example, about the form and proportions of school desks are designed to cure an evil that ought rather to be prevented. Again, basing herself upon experimental proof that change of work is by no means rest, she effectively denounces the way in which the ordinary time-table chops up a child's activities into half-hour segments. Her defence of her principle of freedom, though ingeniously illustrated by means of a series of charts, and her doctrine of imagination, though it may find some weak points in the Froebelian armour, will not carry such universal conviction. In the second and more practical volume a rather narrow range of subjects is lengthily treated. We have little fault to find with the proposed methods of teaching grammar and "metrics," but the vital question whether these things are worth attempting with children under eleven is left untouched. We suppose the question lies outside the range of "scientific pedagogy." The chapters on arithmetic and geometry are good, but there should be nothing new in them to a trained teacher in this country. A perusal of the volumes leaves us still of opinion that the author's chief title to respectful attention lies (1) in her doctrine of freedom, (2) in all she has to say about the hygiene of child-life, and (3) in her scientific attitude towards the problems that she touches.

(2) In her book on "Self-Reliance" Mrs. D. C. Fisher (very well known to many teachers in this country as "a Montessori mother") gives us what she describes as "a practical and informal discussion of methods of teaching self-reliance, initiative, and responsibility to modern children." Much would be gained, in England not less than in America, by a closer understanding between parents and teachers. Mrs. Fisher writes for teachers about children as she sees them in the home. She is genuinely concerned,

and we think rightly so, about the results, say five-and-twenty years hence, of massing children in hordes and training them on uniform lines. School teachers may find it difficult to cultivate individual responsibility in children, but it will do them good to consider Mrs. Fisher's excellent common sense on this matter, in regard both to their own work and to such influence as they can exert on parents.

(3) Mr. J. H. Simpson's experiment in the effect of self-government upon one of the lower forms of a public school has attracted considerable attention, and he has done well to give a complete account of it in his volume entitled "An Adventure in Education." The book supersedes a pamphlet published in 1916, and includes the substance of an article which appeared in THE SCHOOL WORLD some time ago. Like many others, Mr. Simpson owes much, by way of inspiration, to Mr. Homer Lane. We think it certain that in the vast majority of schools adolescents suffer through too much government from above, and we therefore regard Mr. Simpson's experiment as quite in the right direction. For most people he goes a great deal too far, but we hope that they will not on that account dismiss his experiment as useless. We do not think his ideal of a "complete commonwealth school" psychologically sound, but there can be no question that the "house system in our boarding-schools, and some similar unit in our day schools, might be made the basis of a really educative and democratic type of self-government."

(4) "W. E. Ford" is one of the most remarkable pieces of biographical writing we have encountered for a long time. That the writers have simply adopted the literary form of a biography to express their own views about education and life is suggested by the improbability that a real Ford, however averse he might have been to publicity, could scarcely have lived and died unknown. Still, we have known more than one quiet worker whose career might have suggested that of Ford, but for whom no such talented biographers and idealisers as Messrs. Beresford and Richmond were forthcoming. The facts of Ford's life are absorbingly interesting, especially perhaps his association with Mary Worthington—a case in which a good friendship might have been turned into a bad love affair. But the main purpose of the book is to set forth Ford's position as an educator. His ideas about education take form and shape in connection with a private school which he is enabled to start, and the history and fortunes of which are here traced. This part of the book deserves to be read, if only for its aphorisms, of which we give a few examples: "A boarding-school is just an artificial orphanage"; "For coercion by beating [people] substitute coercion by a mysterious thing called personality, in its essence a kind of hypnotism—a step downward, not upward, from the rod"; "The only real liberty is social liberty—the harmony of freedom with obedience that comes of an understanding consent to the control of a reasonable law"; "One generation takes pains to shape its experience into a ladder by which the next can climb—that's all [that education means]." That such quotations could be multiplied indefinitely is, we think, sufficient evidence that the book is well worth attention.

(5) To English students of psychology few names are better known than that of Prof. E. B. Titchener. His "Primer," published in 1898, has helped many a beginner in the subject, especially in our training colleges. The new volume before us, entitled "A Beginner's Psychology," supersedes the "Primer," which will not be further revised. We have many introductions to psychology, some by masters and some not. But the master of any science, if, like Huxley, he

happens to possess the gift of lucid exposition, is a great advantage even in writing an elementary textbook. The reader of Prof. Titchener's introduction feels himself in safe hands. Beginners in psychology are (p. 34) wisely exhorted to stick to one book at first; and we know of none better to stick to than this. We are glad to see that the questions and exercises, which formed a valuable feature of the older book, are retained in the new.

(6) "The Book of School Games," edited by Mr. C. E. Hodges, will be found useful for the lower and middle forms of secondary, and for the upper departments of elementary, schools. Games for little children are not included in its scope. Besides descriptions of games suitable for the playground, there are sections on classroom games, geographical and historical games, and physical exercises treated as games. The preface states that "all the games that have been chosen for inclusion in this volume can be unreservedly recommended; they have been given fair trial, and have proved eminently successful in use." There are a dozen photographic illustrations, besides a number of diagrams.

(7) "The Oxford Essays in Feminism," issued under the title "The Making of Women," can scarcely be regarded, taken as a whole, as falling within the province of THE SCHOOL WORLD. We have, however, examined other essays contained in the book, besides the one specifically devoted to education, and we are able to recommend them cordially for their sanity of judgment, and for the disposition of the writers to look facts plainly in the face. The question of the remuneration of women, for example, which is of prime interest to an essentially mixed profession like that of teaching, is treated by Miss Rathbone with a just regard for the responsibilities of married men with families. The case for the abstract formula, "Equal pay for equal work," is, however, presented in an appendix. The essay on education shows, as a rule, adequate insight. But it is surely a great exaggeration to say of our elementary schools at the present time that "the children are not to think, but to know; not to reflect, but to repeat."

(8) The first thing that strikes one about Dr. Loram's book on the education of the South African native is the writer's singularly fit qualifications for dealing with his subject. He is a native-born South African, he was brought up and educated in South Africa, and has lived there all his life except seven years, which were spent partly at Cambridge University and partly at Columbia University, where, under the guidance of distinguished American professors, he made a special study of the problem of native education. The result is a volume which breaks new ground, and breaks it with scientific thoroughness and system. Very interesting chapters on the native problem in general, and on the obligation of educating the native, are followed by a series of chapters on the present condition of the various grades of education in South Africa, and another series on reconstruction. A useful bibliography is added. The book, though necessarily not the final word on the subject, is a valuable contribution thereto.

*The World's Battle Fronts at a Glance.* A series of 32 reference maps illustrating all the spheres of fighting, with notes. (Philip.) 1s. 3d.—The notes and maps give a precise and accurate picture of the progress of the war up to the middle of last March. For convenience of reference the "fronts" are indicated along the lines that were held on the several critical dates, so that the fluctuations in the success of the Allies may be distinctly perceived. A useful though small, reference atlas.

## RECENT SCHOOL BOOKS AND APPARATUS.

### Modern Languages.

*Molière : L'Avare.* Edited by A. T. Baker. lxxxvi+10 pp. (Manchester : University Press.) 3s. net.—The professor of French in the University of Sheffield has hitherto published work mainly concerned with the lives of medieval saints—valuable for scholars, if not for schools. His edition of "L'Avare" will at once be welcomed as just the kind of thing we want for the advanced course in modern studies. It is, happily, off the beaten track; it does not confine itself to notes on the text (these have been condensed so far as possible), but gives a most valuable introduction in which Prof. Baker has supplied an eminently readable and interesting account of the life and ways of the society that Molière depicts and derides. A second section deals briefly with Molière's career and writings; another gives a lucid summary of the development of comedy in France before his time; then we have a thoughtful chapter on "Molière and his Art," a good critical treatment of "L'Avare," an account of the sources, and, finally, an estimate of the influence Molière has exerted. The editor's careful work is completed by a bibliography and by some extracts from Plautus, Larivey, and Boisrobert. Taking it altogether, this is the best school edition of any play by Molière that we know of; and even at the university students will learn from it a great deal. We look forward with pleasant anticipation to further work of this excellent kind from Prof. Baker.

*Spanish Conversation.* Book i. By E. A. Baton. iii+93 pp. (Rivingtons.) 2s. 6d.—Some remarks on pronunciation (in which no use is made of the international symbols) is followed by lists of words, English and Spanish in parallel columns, on the left-hand pages, and "conversation," also in both languages, on the right-hand pages. The words are not very judiciously arranged and the "conversations" are not closely connected with them; they are indeed lists of short sentences rather than actual, living conversations. Thus the conversation (nominally on "The blouse") runs as follows:—"Open the door. Come in! Push the door. Go upstairs. Go into the study. He is upstairs. He is in the hall. Knock at the door. Who is there?" etc. The "colloquial exercises" appended contain disconnected English sentences for translation into Spanish. It will be seen that the book assumes teaching on old-fashioned lines, & purely translational methods; and even allowing for this, it is not very good of its kind.

*V. Hugo : Hernani.* Edited by F. W. Odgers. ii+116 pp. (Blackie.) 10d.—A handy, unpretentious edition of this play, which, in spite of its extravagance and absurdities, will continue to be read on account of its lyric qualities and its place in the romantic movement. The editorial apparatus is entirely in French; it comprises a very brief introduction (fourteen lines only on the life and works of V. Hugo), five pages of notes, and five pages of questions on the text, with subjects for free composition based on the subject-matter of each act, but in most cases rather too vague to be really helpful. What, for instance, is one to make of: "Chez quel peuple l'hospitalité est-elle critiquée actuellement au plus haut point?" Even the addition in brackets of "Yussouf, par Lowell," does not make this a good subject for free composition.

### Classics.

*M. Tulli Ciceronis, Orationes Pro Milone, Caesariane, Philippicæ, recognovit breviorum adnotauit et critica instruxit A. C. Clark.* Editio Altera.

(Clarendon Press.) Paper, 3s.; cloth, 3s. 6d.—We greet with enthusiasm this first volume of Prof. Clark's revision of Cicero for the "Scriptorum Classicorum Bibliotheca Oxoniensis." It is now seventeen years since he brought out the first edition, and the discovery of as many as nine new MSS. in the meantime has rendered necessary a thorough revision of the accepted text, especially for the "Philippicæ." (In this connection scholars will await with interest Prof. Clark's book on the "Descent of MSS.," which has been in the press for some time, and will, he hopes, be published as soon as men have time once more for considering such things.) This is not the place for a critical appraisement of the treatment of the new MS. evidence, but Prof. Clark's reputation as a palaeologist, and his having taken Cicero for many years as his province in knowledge, are sufficient to make this new edition indispensable in our schools. But one may note here the interesting admission that Zielinski's work on the rhythm—especially on the *κῶνα*—of oratorical prose has led him to be more cautious in suspecting glosses and grammatical interpolations, and Prof. Clark's own researches into the arithmetical composition of a MS. page lead him to a similar caution.

### English.

*Shakespeare Day.* 35 pp. Shakespeare Association. (Chatto and Windus.) 1s.—This is a report of a meeting which took place a year ago; no reason is given for the delay in publication. The speeches contained in the report are good, but not in any way superlative; that of Mr. H. G. Wells is the brightest and most convincing. But this is of little importance. What is important is that there is a proposal to introduce a Shakespeare Day in all the schools of the British Empire and America, and on this day, according to the design of the promoters, the children themselves should act scenes from Shakespeare, and should honour the poet. Before we condemn such a proposal as un-English—which it certainly is—we should remember that, first of all, children can act; next, that Shakespeare (in parts) is almost the only playwright who appeals greatly to children; and also that the introduction of a "Day" is likely to do more for a popularisation of Shakespeare than any number of editions. We may add that, after cricket, Shakespeare and Dickens have been the best olive-branches held out by us to Dominions overseas; and the children's day would be likely to rivet the new-made union between this country and the United States.

All this may sound a trifle sceptical; but it must be remembered that we as a nation are not given to the celebration of days, and that neither the man in the street nor the teacher in the schools pretends to know much about Shakespeare. That a proposal like this has in it great possibilities we do not doubt; but in order to bring about any result worth naming it would be well if a hundred teachers could discuss the matter, and if the necessary funds for a genuine programme could be guaranteed. You cannot do anything in the schools without the help of the teachers, who will have all the hard work and no recognition. The dramatic note was very finely struck when, at the meeting of which this booklet is a report, a copy of the Third Folio was presented to the American Ambassador. This, in our opinion, was a note that will re-echo through the States; and the States have done a great deal for Shakespeare's memory. Probably the inscription on this folio will be printed, read, and known in all the schools of America—as it should be.

*The English Journal* (80 pp.) for February, 1918, is, as our readers know, published at Chicago. Generally it contains at least one arresting article, and this number deals with the "Improvement of American Speech."

Dr. Krapp, who writes the article, makes no mention of Henry James's rather fierce lecture on the subject, and, moreover, seems not to have any idea of what—at any rate in these islands—we dislike in ultra-American speech. Still, it is something to find an essay on the subject, and it may be that further light will be thrown, not on slang, neologisms, or peculiarities of syntax, but on stridencies, nasalities, and absence of music. We do not yet know the causes of any of these, and how should we know the remedies? But it seems clear, in the first place, that few Americans desire "improvement," and, in the second, that many need none; but *O! si sic omnes.*

*The Blessed Birthday.* By Florence Converse. 64 pp. (Dent.) 2s. 6d.—This is a rather remarkable miracle play. It was to be expected that the writer, whose reading and literary work are so various, should depart from the tradition, and on a first reading the work looks crude. But this is only on a first reading, and we can easily imagine that if prepared by a good "company," with appropriate music, the play would be intensely interesting. We would plead for the alteration of a word or two from the lips of the Boy Jesus—but only for a word or two. The illustrations are remarkable, and the last is very beautiful. Probably a curtain or two against which the brilliant dresses would stand out is all that is needed for background. If scenery be asked for, the stage directions supply all hints. Colour streams over the little play.

### History.

*The Teaching of History and the Use of Local Illustrations.* By the late F. Seehoim. '16 pp. (Historical Association, 22 Russell Square, W.C.1.)—This leaflet (No. 45) of the Historical Association consists of a paper read by the late Mr. F. Seehoim at the inaugural meeting of the Hertfordshire Branch of the association in 1910. It is illustrated by three maps and plans taken from Mr. Seehoim's classical work on the "Village Community." So high is Mr. Seehoim's authority on all matters relating to English manorial economy and also on all matters connected with the history of Hitchin and its neighbourhood that this paper will be read with careful and respectful attention by all teachers who wish to know how a master in their craft would use local illustration to elucidate the course of general English history. Though, naturally, much that Mr. Seehoim says applies only to Hertfordshire, yet the principles which he lays down are of universal validity.

*The Question of Alsace-Lorraine.* Translated from the French of Jules Duhem by Mrs. R. Stawell. 266 pp. (Hodder and Stoughton.) 2s. 6d. net.—This book gives us, with that admirable lucidity, order, and brevity characteristic of good French writers, a statement of the French case for the restoration of the two lost provinces. It is divided into two parts. The first part shows how the question is regarded in Germany, in France, and in the provinces themselves; it concludes with an examination of the leading proposals which have been made since 1871 for a settlement of the vexed problem raised by the Germanic occupation effected that year. The second part supports the French demand for the return of the provinces by means of three lines of argument—geographical, historical, and political. The whole volume should be carefully studied by any—if such there be—who think that peace with Germany can be made while this crucial question remains unsettled.

*Ordeal by Sea.* By Archibald Hurd. 227 pp. (Jarrold's.) 5s. net.—Mr. Archibald Hurd dedicates this moving book to "the officers and men of the British

merchant navy who, exhibiting unsurpassed courage, resource, and loyalty, have stood in the front line of the war by sea against a ruthless foe." In the chapter Mr. Hurd tells the story of some of the worst of Germany's innumerable and unspeakable villainies committed on the sea during the course of the present war, such as the sinking of the *Lusitania*, the torpedoing of the *Sussex*, and the violation of the *Treaty of Cross*. Over against this he sets the heroic endurance and the marvellous resource of the seamen of the island race. The record of the British fight for freedom, with its splendid appeal to all that is best and bravest in the national character, should be widely read. It will materially assist in the maintenance of that resolute spirit in the people which is needed if this struggle is to be pursued until it ends in the cleansing of the earth of the Germanic abomination.

### Geography.

*Visual Geography.* By Agnes Nightingale. Book iii., *Many Lands*. 48 pp. (Black.) 10d.—In this little book twenty-four pages of outline diagrams are provided for the young pupil to colour. Opposite each picture the letterpress conveys a little information about the country to which the picture or pictures refer. Instructions are also given as to the colours to be used on the pictures. Asia is represented by ten pages, Africa by three, South America by two, Canada by two, Australia and New Zealand by one each, and Europe by five pages. The pictures make no attempt to cover all the items of interest regarding any area, and the letterpress supplements the information conveyed by the picture with additional facts. In view of the interest shown by young children in Book i. of the series, this addition to it should prove popular.

*Frontiers: A Study in Political Geography.* By C. B. Fawcett. 107 pp. (Clarendon Press.) 3s. net.—Mr. Fawcett has produced within a small compass a readable yet comprehensive account of the geographical aspect of frontiers, a subject which has a fascination of its own as well as considerable practical importance during the present upheaval. He rightly emphasises the fact that a frontier is a zone and not a line, even when the political boundary is defined by a river. Rightly, too, the history necessary to his study is not allowed to obscure the really fundamental geographical nature of the argument. The book will be useful not only in connection with present controversies and future discussions concerning the terms of peace, but also to the teacher for purely pedagogic purposes in the classroom. It ought to find a place in every school library.

### Mathematics.

*Infinitesimal Calculus.* By F. S. Carey. Section i., xiii+144+v pp. 6s. net. Section ii., x+352+iv pp. 10s. net. (Longmans.)—So many treatises on the calculus have appeared in recent years that a fresh one must be regarded as in some sense a challenge to its predecessors. It is to be presumed that the author of such a book considers either that he has discovered something which has escaped the notice of previous workers in the same field, or that he has reached some new viewpoint which presents familiar objects under a clearer aspect. In the case of the book before us the second of these grounds without doubt the justification for its existence. The results of the critical examination of the foundations of mathematical analysis, at first accessible only to advanced students, are now filtering down to the jobs of workers in the more elementary branches. This book is designed for use in schools, but at the very beginning we meet with *class, sequence, arithmetic continuum, Cantor-Dedekind postulate, open and closed*

unge; terms which connote ideas almost quite unknown to a generation of mathematicians not yet passed away. Prof. Carey's long experience as a teacher has doubtless proved that these ideas can be presented in such a way as to be understood by the beginner, and that they lead to a much firmer grasp of the fundamental principles of the subject than was obtainable w<sup>th</sup> the underlying difficulties were ignored. As a particularly happy instance of the excellent way in which these matters are handled, we would instance the discussion of the necessary conditions for convergence to a limit. In this connection also a distinct contribution to the improvement of mathematical notation is made by the use of single-barbed arrows to indicate the upward or downward character of the convergence, the credit for suggesting this device being given to Dr. Mercer.

Naturally, the greater part of the ground traversed is familiar, but the final chapter on graphics and nomography introduces readers to a subject which, though cultivated in France and by engineers in this country, has hitherto been neglected by makers of academic text-books. Teachers may be assured that they could not desire a better introduction to the calculus.

#### Science and Technology.

*The Exploitation of Plants.* Edited by F. W. Oliver. viii+170 pp. (Dent.) 2s. 6d. net.—This collection of ten lectures, delivered at University College, London, by various authors, will no doubt appeal with the greatest force to students of botany (and geography), who will find it in the highest degree suggestive and stimulating. It ought, however, to reach a much wider public, for it shows in the clearest possible manner that almost unlimited scope for the development of our plant resources still exists, in spite of the work which has already been done in this direction. Prof. Oliver's introductory lecture is an admirable general survey of the field, and he also writes on the possibilities of utilising various types of waste lands. Prof. W. B. Bottomley treats of plant food and soil problems, and describes the remarkable results he has obtained with bacterised peat as a manure. Dr. E. J. Alisbury's lecture on timber production in Britain shows conclusively the importance of ecological research to practical forestry. Tropical exploitation is dealt with by Dr. J. C. Willis (who pays special attention to rubber cultivation), and the cotton plant by Dr. V. Laurence Balls. Lectures on vegetable dyes, tea-taking, medicinal plants, and coal, by other specialists (three of them women), complete a volume of quite unusual interest and value.

*British Grasses and their Employment in Agriculture.* By S. F. Armstrong. viii+199 pp. (Cambridge University Press.) 6s. net.—The enormous economic importance to British agriculture of the family Gramineae—both cereals and forage grasses—is obvious to anyone who gives the subject a moment's thought, but here has hitherto been no text-book dealing adequately with British grasses from the point of view of the farmer. Students of agriculture will therefore welcome Mr. Armstrong's authoritative manual, which fills the gap. It must not be supposed, however, that the book is of merely technical interest. Part i., including two-thirds of the whole, will be invaluable as a reference book for senior students of botany, who will find in it not only admirable chapters on the morphology, general biology, and ecology of grasses, but also useful keys to identification of the plants and their "seeds," as well as botanical descriptions of the species. Part ii., considers the actual work of valuing, purchasing, and compounding seeds, the characteristics of the various grasses grown on the farm, and the general treatment of grassland. A word of special praise must be given

to the 175 illustrations, which, with few exceptions, are new. The rival claims of pasture and arable cultivation have been much discussed lately, and it is interesting to note that the author strongly advocates that much less land should be under permanent grass, and a much larger area devoted to alternate husbandry.

#### EDUCATIONAL BOOKS PUBLISHED DURING MARCH, 1918.

(Compiled from information provided by the publishers.)

##### Modern Languages.

- "Modern Language Teaching." Vol. xiv., No. 2. Edited by J. G. Anderson. 32 pp. (Black.) 8d. net.
- "Handbook of Russian." By Michael V. Trofimov. 142 pp. (Constable.) 3s. 6d. net.
- "First Spanish Course." By E. C. Hills and G. D. M. Ford. 340 pp. (Harrap.) 4s. net.

##### English: Grammar, Composition, Literature.

- "Johnson and Goldsmith and their Poetry." By Wm. H. Hudson. 160 pp. (Harrap.) 1s. 6d. net.
- "Shakespeare's Sonnets and 'A Lover's Complaint.'" (Arden Shakespeare.) Edited by C. Knox Pooler. 161 pp. (Methuen.) 3s. net.
- "Wordsworth: Select Poems." Edited by S. G. Dunn. 154 pp. (Oxford University Press.) 1s. 6d. net.
- "Coleridge: Select Poems." Edited by S. G. Dunn. 152 pp. (Oxford University Press.) 1s. 6d. net.

##### History.

- "The State and the Child." A record of the legislation affecting the criminal child, industrial schools, and prison treatment of children. By W. Clarke Hall (Old Street Magistrate). 106 pp. (Headley.) Cloth, 3s. 6d. net; paper boards, 2s. 6d. net.

##### Geography.

- "Introductory Geography." By H. Clive Barnard. 154 pp. (Black.) 1s. 8d.
- "A Geography of the British Empire." By A. J. Herbertson and R. L. Thompson. Third edition, revised by O. J. R. Howarth. 256 pp. (Clarendon Press.) 3s.
- "Contour Atlas of the British Isles." 16 pp. (McDougall.) 6d. net.

##### Mathematics.

- "Theory of Functions of a Complex Variable." By A. R. Forsyth. Third edition. xxiv+856 pp. (Cambridge University Press.) 30s. net.

##### Science and Technology.

- "Aeronautics in Theory and Experiment." By W. L. Cowley and H. Levy. xii+284 pp. (Edward Arnold.) 16s. net.
- "The Theory of Electricity." By G. H. Livens. viii+718 pp. (Cambridge University Press.) 30s. net.
- "Handbook to the Natural History of Cambridgeshire." (Re-issue in paper covers.) By J. E. Marr and A. E. Shipley. viii+260 pp. (Cambridge University Press.) 1s. net.
- "What Industry Owes to Chemical Science." By Richard B. Pilcher and Frank Butler-Jones. With an introduction by Sir George Beilby. 150 pp. (Constable.) 3s. net.
- "A Text-book of Physics for the Use of Students of Science and Engineering." By J. Duncan and S. G. Starling. Illustrated. In five parts. "Dynamics," 5s.; "Heat, Light, and Sound," 6s.; "Magnetism and Electricity," 4s.; "Heat," 3s. 6d.; "Light and Sound," 3s. 6d. Complete 15s. (Macmillan.)

**Miscellaneous.**

"The Book of Joshua." In the Revised Version. By the Rev. G. A. Cooke. (Cambridge Bible for Schools and Colleges.) xxxvi + 232 pp. (Cambridge University Press.) 2s. 3d. net.

"The Public Schools Year Book, 1918." The official book of reference of the Headmasters' Conference. xxxii + 818 pp. (Deane, The Year Book Press.) 6s. net.

"Tinker Tailor." By S. B. Pearse. 8 pp. (Harrap.) 1s. 3d. net.

"More Mother Stories." By Maud Lindsay. 192 pp. (Harrap.) 4s. 6d. net.

"The Price of Freedom." By F. Melian Staw. 168 pp. (Headley.) 3s. 6d.

"The Tower." By "Watchman." (Headley.) 2s.

"Junior Scholarship Questions." By H. Smith. Teachers' edition. 48 pp. 1s. 6d. net. Pupils' edition. 48 pp. 6d. net. (McDougall.)

"Educational Handwork." By S. Taylor. 156 pp. (McDougall.) 6s. net.

"Play Drill and Singing Games." Words by Miss L. M. Sidnell. Music by Miss A. M. Gibon. 32 pp. (McDougall.) 1s. 6d. net.

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*The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.*

**Bolshevik Multiplication.**

CERTAIN South Russian peasants are able to multiply together figures no matter how large, and yet do so while unable to do anything more than double, halve, add, or subtract, and not understanding fractions; any such arising have to be ignored.

The *modus operandi* is as shown in four examples:—

No. 1. Multiply (say)  $40 \times 25$ —

- Put 40 at the top of the left-hand column (or *vive versa*).
  - Put 25 at the top of the right-hand column to match.
  - Go on halving the left hand.
  - Go on doubling the right hand.
- Ignore left hand. Total up right hand (*except where left-hand figures are even*).

L.	R.
40	25
20	50
10	100
5	200
2	400
1	800
<hr/>	
	1000

No. 2. Say  $28 \times 10$ —

L.	R.	
28	10	Not added, 28 even.
14	20	" 14 "
7	40	$\frac{1}{2}$ of 7 = $3\frac{1}{2}$ . The $\frac{1}{2}$ ignored.
3	80	$\frac{1}{2}$ of 3 = $1\frac{1}{2}$ . The $\frac{1}{2}$ ignored.
1	160	
<hr/>		
	280	

No. 3. Say  $9 \times 6$ —

L.	R.	
9	6	$\frac{1}{2}$ of 9 = $4\frac{1}{2}$ . The $\frac{1}{2}$ ignored.
4	12	(4 is even)
2	24	(2,,)
1	48	
<hr/>		
	54	

No. 4. Say  $28 \times 19$ —

L.	R.
28	10
14	38
7	76
3	152
1	304
	<hr/>
	532

Correct every time!

Can any readers of THE SCHOOL WORLD explain the principle involved in these operations or throw any light upon its origin?

H. J. R. TWIGG,  
Arundel.

**Economy in Laboratory Material.**

In these days economy of laboratory material is not only desirable, but also necessary, and therefore the following suggestions as to the use to which the fittings of broken, inverted, incandescent mantles may be put may be of some interest to teachers of science:—

(1) The fitting (Figs. 1 and 2) makes a satisfactory crucible rest.

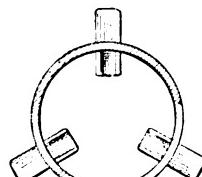


FIG. 1.



FIG. 2.

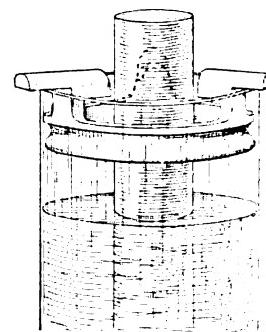


FIG. 3.

(2) Inverted, so as to fit the top of a cylindrical glass vessel, such as an ordinary graduated jar, the fitting may be used to keep a wooden rod floating in an upright position when flotation experiments are being performed (Fig. 3).

NORMAN M. JOHNSON,

Kirkcaldy High School, Kirkcaldy, N.B.

**The School World.**

A Monthly Magazine of Educational Work and Progress.

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# The School World

A Monthly Magazine of Educational Work and Progress.

No. 234.

JUNE, 1918.

SIXPENCE.

## OUR ALLIANCE WITH THE *JOURNAL OF EDUCATION.*

WITH the present issue, THE SCHOOL WORLD ceases as a separate publication and joins forces with its friendly contemporary the *Journal of Education*. It is not without regret that we make this announcement; for during the twenty years of our existence we have enjoyed close association with contributors and readers in all departments of educational work over a large part of the world; and it is not easy to contemplate a change which may disturb this relationship. For the valuable assistance which has been afforded us by practical teachers and other writers from the beginning we are very grateful.

THE SCHOOL WORLD has occupied a distinctive place among educational periodicals, and many tributes have been paid to the service it has rendered to men and women engaged in school work throughout the Empire and beyond. Our main aim has been to present the results of experience of the principles and methods of teaching; and while we have not neglected administrative and other aspects of education, we have always felt that these were sufficiently represented in periodicals like the *Journal of Education*, with which we shall in future be incorporated.

There is no reason, however, why this amalgamation should signify loss of the individual characters of either journal. A certain amount of inevitable overlapping will be avoided, and the best features of each magazine will be preserved in the combined issues of both.

No. 234, VOL. 20.]

For fifty years the clear waters of the *Journal of Education* have distributed rich cargoes of educational thought and work to the new cities which have grown up along their banks. THE SCHOOL WORLD, during nearly half that period, has turned the mills of its own fertile region, providing stimulus and enlightenment for the daily round and common task. The confluence of the two streams has now been reached, and a broad river is before us in which the onward flow of the separate currents is united. We are uplifted by the prospect presented by this increased capacity and strength, and, with these as inspiration, we look with confidence to the appearance of the argosies to be entrusted to the intermingled waters.

## MATRICULATION EXAMINATIONS FOR GIRLS.

By C. LINKLATER THOMSON.

OF late years there has been much discussion as to whether the secondary-school course for girls should not be modified in such a manner as to approximate less closely to that of boys, and to correspond more nearly with feminine idiosyncrasies and with the probable requirements of the future careers of the pupils. It has been argued by some of those chiefly concerned with the education of girls that because many of them possess little aptitude for mathematics or natural science they should be allowed, in their matriculation or school-leaving examination, to substitute some other subject for the former, and be required to pass a test in the latter based mainly on its application to domestic economy. It is clear that to allow such options would affect the whole curriculum of girls' schools; lower standards would prevail in mathematics and natural science, and less time would be given to these subjects.

The movement is probably a reaction from the severe tests to which girls of the last generation were subjected, and can be more easily understood if one is old enough to remember the reforms that took place in their education between 1870 and 1885, when many of the women's colleges and the first of the girls' high schools were established. The services rendered by the pioneers of women's education can never be sufficiently acknowledged; yet it cannot be denied that in their revolt against the superficiality and sentimentality prevailing in most of the girls' schools of the time (private day- and boarding-schools) these reformers swung the balance too far in the opposite direction, and, giving undue weight to what had hitherto been regarded as exclusively masculine studies, tended to regard ability in these as the chief indication of superior intellectual power, and to depreciate the type of mind which preferred the humanities.

In those days the teaching of science, even in boys' schools, was in its infancy; and in many of the most advanced of the girls' high schools there were no laboratories. Attention, therefore, was chiefly concentrated on mathematics, and I think I am correct in saying that a higher standard was then exacted in the ordinary school examinations than is required now. To reach this standard was certainly an effort for the ordinary girl, especially if she had distinct preferences for other subjects. My mind goes back to days spent in the 'eighties in one of the most famous of the early high schools, where, in the Sixth Form, one was compelled to devote five periods a week to mathematics against two to English, no English essay being ever required. How well I remember the lessons in algebra given by a specialist to whom the subject had never presented any difficulties, who worked through problems on the board with lightning speed, and never stopped to explain anything. The sun streamed through the open window, the branches of the trees swayed just outside, the light reflected from the board prevented one from seeing the figures; one became more and more hopelessly confused, and at last from sheer boredom began drawing pictures in one's notebook. Worse still was the lonely struggle with the home work and the helpless effort to work out by the directions given in the textbook the problems set in school. Three hours' labour often produced nothing but several pages of incorrect working, which were returned at the next lesson with the cutting comment, "Careless and untidy." Wiser teaching would, no doubt, have discerned the effort behind those futile results, but the effect of constant discouragement in the subject

which was supposed to be the supreme test of ability was to induce extreme self-distrust of one's intellectual power.

The memory of those youthful trials is still so vivid that after the lapse of thirty years I should be inclined to throw in my lot with those who argue that mathematics should not be a compulsory subject for girls in the matriculation examination, were it not for several weighty considerations on the other side. In the first place, I am bound to admit that there was a considerable proportion of my schoolfellows for whom the subject, in spite of bad teaching, had no terrors, and the number of women taking mathematical degrees has always been considerable. Some of these pupils, exceptionally strong in mathematics, may quite possibly have shown some deficiency on the literary side; to them the effort of composing a good essay may have been quite as great as that of solving a mathematical problem to another; yet no one, so far as I am aware, suggests that the test of the English essay should be made optional. As an examiner in English, I have sometimes found that a pupil who had distinguished herself in the essay had failed to reach the necessary standard in mathematics; it may be that the examiner in mathematics was equally disappointed to find that a candidate who had done brilliantly in that branch had been ploughed in English. As a rule, however, such disasters do not happen, the candidate who is sufficiently able to reach a high mark in one being generally competent, by making an effort, to reach at least a pass standard in the other.

Again, it cannot be disputed that some boys are as little gifted in mathematics as most girls; and the mathematically gifted girl will find less difficulty in the subject than the boy with a literary bent. Are we, therefore, to extend the option to this type of boy? If we do not, are we not guilty of injustice towards him? I remember hearing—I forget on what authority—that the late Andrew Lang failed three times in the mathematical group of Responsions before he finally satisfied the examiners. It may be that there are other similar cases, and that by insistence on this preliminary test some exceptionally endowed men may be deprived of the opportunity for a university career. In any case, the hardship as regards the unmathematical pupil tells equally on the individual of both sexes.

Further, it cannot be disputed that the minds most averse to mathematical study are generally those to which the discipline bestowed by it is most necessary. If it be true that most girls possess the "literary" type of

mind (by which I understand a preference for the humanities and a distaste for abstract studies), this is the very reason why the particular bent of their mentality should be balanced by attention to an exact science. Have we not all suffered from books which, though possessing undeniable literary power, were yet marred by bad reasoning, want of precision in the use of words, lack of references, and inaccurate quotation? Of course, I do not maintain that the successful mathematician is always a good reasoner on other topics; but mathematics does hold up a standard of accurate thinking which is an excellent corrective to the literary mind. The patience in following up the steps of a proof and the careful attention to detail which are especially cultivated by mathematics are equally essential to success as a writer on literary or historical subjects. The value of English literary criticism has, indeed, been much impaired because it has too often been confined to the statement of personal impressions, and because the writers have taken little pains to develop an argument which would convince their readers of the justice of those impressions. Vagueness and superficiality, the cardinal vices of those who feel rather than reason, are best counteracted by the discipline given by mathematics.

A third consideration which may be mentioned is that by improved methods of teaching elementary mathematics has become a far less formidable subject than of old. In the days to which I have referred, when it seemed to be the aim of headmistresses to vindicate the competence of the feminine intellect by requiring it to perform difficult tasks in the most difficult ways, to solve problems in arithmetic by algebraical formulæ was regarded as a heinous offence, only to be committed surreptitiously by the most reckless among us; and in geometry we were expected to adhere strictly to Euclid's proofs, though we could have probably followed the reasoning much better if it had been presented in some other way. The only thing to do then, until light dawned on the struggling brain, was to learn the proofs by heart without understanding them; and probably many a candidate has "got through" the first university examination by a mechanical effort of memory. But now that reformed methods are universally approved and adopted, much less time need be given to the subject, and there are few girls who are entirely incapable of making progress in it. Those who are are probably too weak all round to reach the matriculation standard in other subjects, and for them some less severe test might be substituted. Such girls will probably not desire to take a university course or to enter a "learned"

profession. They will content themselves with the lower branches of the Civil Service, become clerks, shop-assistants, or nurses, or adopt some trade in which manual dexterity is of more importance than intellectual brilliance. In the years immediately before us women will be required for many kinds of routine work, formerly reserved for men, in which diligence and docility in following the directions of others are more important than initiative or high mental attainment.

Some of the advocates for differentiation between boys and girls in the study of elementary mathematics also recommend that the teaching of natural science in girls' schools should be conditioned by its bearing on domestic economy, and that in lessons in the subject its application to "home-making" should be especially emphasised. Even in the next generation, it is argued, when women will be compelled to undertake work hitherto done by men, the majority will still become wives and mothers, and by arranging that their course in science shall be organised with a view to their duties in these capacities we shall be giving them two benefits at once—a scientific training and special preparation for their supreme business in life. In my opinion such arguments have little weight. In giving elementary lessons in chemistry or physics to boys no one thinks of considering their future vocation; they may become brewers, or dyers, or doctors, or engineers, or they may become lawyers, or merchants, or bank managers; in any case, the subject will have had its disciplinary value, and the knowledge gained will help to make the world a more interesting place and aid in the comprehension and management of the simple machinery with which everyone has to deal at some time or other. In the case of boys it would be obviously unfair to arrange that chemistry should be taught with a view to its special application to dyeing, for instance; for possibly none or only one of the class would become a dyer.

But is it less unfair to oblige all girls, of whose future career we must be quite uncertain, to follow a course organised with especial reference to domestic science? Although by the law of chances more than half of the class might be destined for domestic life, such premature specialisation would be a distinct handicap to those who had to follow other careers, and a serious injury is done to scientific teaching when, in its earlier stages, its application is narrowed to some particular industry. The true test of the value of any subject in the school curriculum is the intellectual discipline it gives and the "culture" that it can afford; and if by "culture" we understand the widen-

ing of horizon and the revelation of new interests, it is clear that each subject must be treated from the point of view that affords the widest survey of its possibilities. To teach it for immediately utilitarian ends is a mistake in the case of girls as much as in that of boys.

Nor, indeed, should such a policy be necessary, even in the interests of domestic economy. What our grandmothers and mothers did with very fair success even in the days when, judging from contemporary novels, the average woman was a more dependent and less capable human being than her descendant of the present age, their representatives, with the intelligence and self-control developed by better education, can surely accomplish equally well. The faculties trained by other exercises may, without much difficulty, be brought to bear on domestic problems, and the educated woman will very quickly master the mysteries of cooking, of laundry, and of household hygiene, naturally and almost automatically applying her general knowledge of science to these arts.

During the last three or four years there have been many instances of women graduates who, having had no domestic experience before, have qualified as, and become excellent, hospital nurses, run canteens, undertaken the management of hostels, and done the cooking for large hospitals. Among my own Oxford friends there are two women, both of whom obtained a first class in a final honours school, who are now successfully working in domestic capacities and have taken quite kindly to the preparation of fairly elaborate meals; and I appeal to any woman who in recent days has had to dispense with the services to which she has all her life been accustomed, to decide whether domestic duties are not on the whole easy of performance. To those who had no other resources the constant repetition of mechanical processes might, indeed, become monotonous; but such processes are welcome to those whose minds are able to expatiate in realms of their own, because their performance becomes so automatic that it makes small demands on the attention, and the brain is thus set free to work on its own lines. And the way to make domestic life attractive to our girls is not, in my opinion, to educate them especially for it, but so to develop their powers that their interests in every direction may be extended. Such women, even though they are wives and mothers, will escape the narrowing influence of the home circle; they will not talk perpetually of their children or their servants, but will be as detached as a man out of office hours from his business, and equally interested in public affairs and social and political movements.

## THE HOUSE VERSUS THE HOSTEL SYSTEM AT BOARDING SCHOOLS.

By W. F. BUSHELL, M.A.  
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**S**TEREOTYPED systems are dear to the minds of Englishmen, but fortunately, although public schools have laws and customs not easily broken, the system under which boys live is far more varied. And this variability is valuable in affording an opportunity for comparison. Generally speaking, the public is apt to divide schools into day and boarding schools, and each system has its advocates whose enthusiasm is flattering to the institutions concerned and a measure of their success; but to many schoolmasters the large non-local boarding schools give scope and opportunity denied by their rivals, the day schools, and it is of these that this article proposes to treat. At first sight, it might appear that the systems under which the large boarding schools are worked do not admit of many differences; nothing, however, could be further from the truth; and while each school is justly proud of its own method, and tends to regard it as the best, yet it is not unfair to examine, with an attempt at impartiality, the merits and demerits of their claims.

Among the older schools the house system is almost universal; that is to say, the housemaster is generally responsible for the moral care, discipline, and catering of his boys, subject, of course, to those general school rules that may be laid down; but many modern schools, some of them dating from early Victorian times, have adopted the so-called hostel system, where the boys are housed round the sides of a large, central court (or on some similar plan) and have their meals together in a common dining-hall. It is to be presumed that this method was adopted for the sake of economy among other things, as it should be cheaper to employ one matron, to take an example, than many matrons. But that the house system has stood the test of time is evidenced by the fact that, in many cases, even under the hostel system, the boys are classified into houses, or similar units, each under the charge of a housemaster, whose general responsibility includes the moral care and discipline of the boys, but does not, commonly, involve catering for them, nor does he, in general, accept any financial responsibility in the matter. So successful has the house system been that, even in these cases, there are usually one or more outhouses as well when parents can, for a small extra fee, send their boys if they should so desire. In considering these systems it must be remembered that while some schools are entirely run on the

house system, and others entirely on the hostel, yet there are many which combine the two, their preponderating tendency being either in one direction or the other.

For the sake of comparison it is, however, the two extreme types that are most worth considering, and it will not be until a later paragraph that the inside architecture and domestic comfort of a house itself will be alluded to in any detail. The basis of school life, under either system, is generally the house. Whether the school is a good or bad one is, of course, an important point, but the nature of the house and the characteristics of the housemaster are probably far more important. An inquiry as to which is the best house at any school is often heard, and is proof of a recognition of this fact, though it is not without interest that so many parents are sufficiently foolish as to take their house on trust. Assuming, then, that a school has a sufficient number of competent housemasters, under which system is it likely to prosper most? The arguments for the *house* system are, perhaps, as follows:—

(a) The housemaster retains a greater control over the boys he has to train, especially as regards their manners and the decent arrangement of their meals. In short, he has a greater chance of exerting his individuality in insisting on ordinary manners and courtesy.

(b) The housemaster can alter the internal arrangements of the house without reference to penurious bursars or other cautious school officials.

(c) The housemaster has a definite home which he will not easily want to desert for service at another school. He will have opportunities of offering hospitality to colleagues, parents, and boys, in a manner which would be impossible under the hostel system; and, above all, he can easily put up old boys when they come down.

(d) Masters are not herded together in a common room to the derangement of their temper and the discomfort of their life.

(e) There is a greater chance of marriage if a master wishes it; the hostel system is almost anti-social in putting difficulties in the way of its staff, who are, after all, reasonably intelligent and useful members of the community, whom the State should encourage to marry.

In favour of the *hostel* system it may be fairly urged:—

(a) It is cheaper, and hence there is more money available for masters' salaries and reduction of fees.

(b) It is all to the good that a housemaster should not send in bills for boarding to the parents of his boys; his relations can, in short, be of a more intimate and personal nature, and

his living does not depend upon his profits as caterer.

(c) The housemaster need not waste his time inquiring why the beef is bad and quarrelling with the butcher. He can accept such things, like his boys, as an act of bursarial improvidence.

(d) The green-baize door between the private and boys' side of a house is generally non-existent, and a more natural and friendly relationship can exist between the boy and his master.

(e) House feeling does not predominate unduly over school feeling, and the boy has a better chance of feeling he is a member of a great school and not only of a great house. In short, the solidarity of the school has a greater chance of asserting itself.

(f) It is easier to pass over the master who would make an incompetent housemaster, as the emoluments for house service are under this system far less.

These arguments are by no means inclusive, and are merely intended to represent the more standardised opinions which are commonly put forward. But while the arguments for the hostel can, in the main, be dealt with easily, it is far less easy to deal with those advanced on the side of the *house* system.

Taking those for the hostel system, it is not proposed to examine the germs of truth contained in the first three, as, no doubt, they are arguments of some value. But it is easy to exaggerate the economy effected. It is true that the sum-total of servants employed is likely to be less, but in a large centralised institution waste must inevitably occur. It is not to the interest of anyone to economise fuel, light, or food, whereas if the housemaster himself pays for these he is unlikely to permit waste. Proper supervision of servants is also more difficult, and a real attempt to insist on economy all round generally causes friction. The fourth point is probably immaterial, as the green-baize door of the *house* system is now, metaphorically, rarely shut, and the bolts and bars, which school fiction of fifty years ago put on it, have long been obsolete.

The fifth argument requires more examination, for the point it raises is more subtle. It is true that the detractors of the *house* system are fond of urging it, but surely daily gatherings at chapel can do far more for this essentially spiritual feeling than a daily gathering in hall for dinner? It is incredible that so much insistence should be placed on the most trivial act of meeting at dinner, when the incomparably greater advantages of meeting together in chapel are always at hand.

The sixth argument is of some value, but now that seniority plays a less important part than

it did in the selection of housemasters, an arrangement, under the house system, whereby the rejected candidate receives an increased emolument in lieu of a house should not be impossible. In such cases soreness may often be unavoidable, and some such plan would help to mitigate it.

Perhaps the really serious point in these arguments is the indignity felt by some men in having to make a profit out of boarding fees. But, under whichever system the school is run, such a profit is made, or was made in pre-war days, and whether such profits accrue to the housemaster or school seems immaterial so far as dignity is concerned.

On the other hand, the arguments for the house system are far harder to deal with. There are few enthusiastic housemasters who would dispute the first two. Each housemaster has, happily enough, his own individuality, and it is far better he should exercise it to the full than be deterred by innumerable school regulations, which are often far too numerous and unnecessary under the hostel system. There are many such who are only too conscious of the lack of opportunity which they are afforded; of the difficulty of enforcing much which they know to be for the best welfare of their boys, and of the difficulty of maintaining their house, of which they are not the master, in a state of cleanliness and order, when they have no power of appointing or dismissing the house servants. All this must naturally react upon their work. It is only the most complete enthusiast who can maintain his idealism amidst conditions which may approach little to the ideals which he has set himself, and his zeal will soon vanish in surroundings of which he disapproves, but which he cannot alter. We are, many of us, too familiar with the *non possumus* of governing bodies and other functionaries, but they are apt to forget that this non-sympathetic attitude may waste, rather than gain, by sending useful material elsewhere.

There is no reason at all why a greater standard, not necessarily of comfort, but rather of external surroundings, should not be aimed at than is often the case, and from the force of circumstances the housemaster will often show greater anxiety for this than the school. An old schoolmaster, who started his work in the 'sixties at a famous public school, once told the story of how he conducted an inquiring American into his classroom, which happened to be one of those redolent of memories, but ancient, dirty, and ill-ventilated. The American lifted up his hands in astonishment. "Think," he said, "that many a famous man was educated in this room, where I should scarcely

like to keep a pig." No doubt this referred to a classroom, and matters are better now, but it is open to doubt whether the idea that external beauty and decency are among the main and decisive factors in education has taken real root.

It is generally the influence of the few that will lead the many, and it is under the house system that the few can set an example in their houses greater than that set by the dead level of mediocrity which they would have to endure under the hostel system. No doubt money is a factor, and it may be an expense to maintain the structure and decoration of a house at a high level; but the educative results of good surroundings are so great, and are so often reflected in the demeanour of the boys, that it should be possible for the enthusiast to make what attempt he wishes. But, comes the answer, it is equally easy to beautify a house under whatever system it is conducted. Such a statement is true. In practice, however, there is little doubt that the separate house system, for some reason, leads to better results. Perhaps mutual competition among housemasters is sufficient to account for it, and though the poor man with a large family might complain that such competition was wrong, yet, from the broader aspect, anything that tends to the improvement of the educational atmosphere surrounding a school cannot be out of place.

The third argument in favour of the house system is very strong. An ability to extend hospitality to old boys is of paramount importance in helping to foster the spirit of loyalty which is the pride of all good schools. The ability to entertain parents, colleagues, and boys is equally important, and although such entertainment is not impossible under the hostel system, yet everyone who has experienced the two must recognise that while it is easy in one case it is often most difficult in the other, and can even then be carried out only to a limited extent. Such hospitality, especially to old boys, is one of the pleasantest of duties, and every housemaster knows how much it is appreciated. But, under the hostel system, he may possess only one living-room, and, with a visitor, may have to interview boys in the passage, or his bedroom. The common-room may be crowded, and, at the best, admit only one or two guests, and the inability to offer the midday meal to all comers is a real hardship.

And, then, as to the common-room life. Nearly every school has some form of common-room, but, whereas in the house system it is usually a room which can be visited or not, just as the master wishes—in fact, a kind of club—under the hostel system it is usually a place where he has all his meals, though the actual living-rooms may be situated in the school

buildings at some distance off. Thus, in practice, the common-room life is confined to schools under the hostel system. In some cases all meals may be taken with the boys, but generally this happens only in the case of the midday meal.

Now many men are gregarious, and schoolmasters, perchance, have to be. But the nature of their work, involving, as it does, continual contact with different people, such as headmasters, colleagues, boys, and others, is a perpetual strain, and even the most equable temperament sometimes desires privacy. In a long day there is little leisure except at mealtimes, and it is a doubtful advantage to compel masters to meet one another at these hours day by day. Continual contact with one's colleagues is admirable, but human nature has its limitations, and at least one unfortunate and overdrawn school story harps on this theme. It is far better to allow members of a staff to choose their own homes; such a course will tend to greater forbearance and esteem. At the end of a hard term it is easy to comment unfavourably on A's method of eating his porridge, or B's method of drinking his coffee, and the merest triviality assumes an importance which, in an easier system of living, would never even appear. It has been argued that this system of living together causes close friendships, which allows A to gain something from the point of view of B, while B gains similarly from A; but surely it is incredible that such gains are not equally easy of accomplishment if A does not always drink his coffee in B's presence. Actual friction may often arise, but such a gain is negative rather than positive.

The fifth point is marriage. It is notorious, and, in fact, inevitable, that under the hostel system the majority of the men must remain unmarried. If the masters live in the midst of the boys, scarcely any other plan is possible. The question whether the married or unmarried man makes the better schoolmaster cannot be discussed here; but it is not good that a man who desires to marry should have to leave for another school or another profession. Such a situation directly clashes with the interests of the country. Enforced celibacy has never been dear to Englishmen.

Apart, then, from the question of expense, the house system seems to have irresistible advantages, and it is not without interest to note that it is well-nigh universal in those schools that have stood the test of time. Statistics of actual expense would be difficult to classify and difficult to obtain, but it is not inconceivable that partisans have been led into an undue estimate of the relative difference, in this respect, between the two systems. If, after the

war, the age of economy begins, perhaps the house system will suffer in repute, but the awakened interest in education leads to the hope that real efficiency may be maintained as a form of national insurance, if for no other reason.

As regards the internal structure and arrangement of a house only a few remarks can be made here; for the ideal system of studies and dormitories, though very far from universal, is not uncommon. The great advantage of the study system is the sense of privacy it gives. In some schools few studies exist, and it is probable that even for the boys "the common-room life" has its drawbacks. Everyone, whether boy or master, likes his own home, and the publicity of life without studies is only one degree more attractive than the lack of comforts it affords. Some schools, on the hostel system, have studies outside their houses, but this may easily tend to be antagonistic to the house spirit, which, after all, in whatever form it has been adopted, has been productive of much that is good. Others have small compartments partially boarded off in the common-room for each boy. Other schools use classrooms as living-rooms, and though all such plans are better than the system which compels boys to do everything—working, living, and eating—in one room, yet to many a boy they cannot give the same opportunity of privacy which the study system affords.

It is easier, too, for the housemaster to pay friendly visits during evening preparation. Mr. Benson lays great stress upon the advantage to be derived from such friendly calls, which he always carried out from the social, rather than the magisterial, point of view, a chance question on a book or picture eliciting interests and evoking sympathy which should be the basis of the relations between housemaster and boy.

The great majority of the public schools have a good many years behind them, and the system on which they are run is the doing of the past, rather than of the present, generation. It will not be without interest to see how future generations regard the rival systems in any foundations that are yet to come.

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*The Student's Handbook to Cambridge, 1917-18.* vi + 703 pp. (Cambridge University Press.) 6s. net.—This is the sixteenth edition (revised to June 30th, 1917) of this indispensable little treasure-house of information. The most important additions are the regulations for the new English Tripos, and the new regulations for the Modern and Medieval Languages Tripos. There is also an account of such parts as concern undergraduates of the temporary emergency legislation which has been occasioned by the war. Every reference library in the country needs this book, but we should also like to suggest that it be found in every masters' common-room.

## ADVANCED COURSES ON COMMERCIAL SUBJECTS.

By FRED CHARLES, B.A.

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**C**OMMERCIAL subjects have not, so far as can be gathered from official reports, yet found a place among those in which advanced courses have been recognised. What are the reasons? Are they sentimental? Are they historical? Or are commercial subjects wholly unsuitable for inclusion in advanced courses for secondary schools?

The innate conservatism of an education largely controlled by the ancient universities will undoubtedly fight against the recognition of a utilitarian curriculum; men brought up on the language and literature of the ancient civilisations look askance at a curriculum based on "humanities" represented by the affairs of to-day and the history of the last hundred or hundred and fifty years.

Commercial education is in bad repute; its reputation is due, not to its own shortcomings, but to the very narrow and inefficient preparation for office boys and junior clerks which was formerly—and not so very long ago—dignified by the name of commercial education. Elementary technical commercial subjects, shorthand and bookkeeping, were admitted to the schools on sufferance owing to the demands of parents; the time allowed was inadequate and badly distributed; the teachers were often ill qualified; and the result was that both subjects and teachers were looked down upon, sometimes deservedly, by the regular staff. In these circumstances no satisfactory progress was made; and no wonder! The lack of success was due not to the subjects, or their unsuitability for admission to the school curriculum, but to the conditions under which they were introduced.

One cause is deeper still: the attitude of the average educated Englishman towards trade goes far to prevent the recognition of anything commercial; the professional man considers himself socially a cut above the commercial man; the commercial man, himself, in his private life, adopts an attitude almost apologetic for his occupation; no one recognises him as the great and patriotic benefactor to mankind that he could reasonably be held to be. These considerations may be thought irrelevant, but commercial education will not become really effective until commerce has taken its place in the ranks of the professions. It is gradually, but surely, winning recognition.

The inclusion of commercial subjects in advanced courses is likely for some time to be

opposed by established authority, central, local, and professional. But are the subjects wholly unsuitable? Or are some suitable, others unsuitable? And, if so, where is the line to be drawn? If commercial education is defined as the development of character, the training of faculties, and of the power of acquisition of knowledge—all of them, character, faculties, knowledge, being important in commercial life—by the study of subjects that are useful in commercial life, then, undoubtedly, some of these subjects will be held by most educationists to be suitable and some unsuitable for inclusion in the school curriculum, and some will draw the line in one place and some in another.

Among the commercial subjects that would probably be most readily recognised as suitable for advanced courses are history, geography, and modern languages. These subjects, it must be remembered, are the commercial subjects known by these names, and since they may differ from the customary school conceptions of them it may be well to particularise. The history of the commercial curriculum is to be mainly the history of the last hundred, or hundred and fifty, years, the growth of the Empire, the building up of modern Europe and of the commercial relations of the peoples contained therein; it must be a subject also such as is able to bridge the gap between the history of the schoolboy and the politics of the man.

The geography of the commercial curriculum must lead from climate and configuration to products, distribution, communications, and transport. The study of a modern language for commerce must enable the pupils to understand and to speak, read, and write the language correctly; to know the customs, habits, thoughts of the people speaking the language, their products and their wants; a "modern language" in a commercial curriculum, in fact, implies the study not only of the language itself, but also of the people speaking it, and of the places where it is spoken. The language is learnt, not as an end in itself, but as a means to an end<sup>1</sup>—that is, to enable a man to communicate with and to understand the people speaking it.

These subjects, so understood, would be both commercial and educative; they would be a part of commercial education; and the strictest educationist might reasonably assent to admit them as suitable for advanced courses.

Some time ago the University of London established examinations for a degree in economics. It is fair to assume that subjects selected by the university authorities for this

<sup>1</sup> This was written before the publication of the Report of the Committee to inquire into the position of Modern Languages—which see.

intermediate examination for a degree are equally suitable for pupils of from sixteen to eighteen years of age attending secondary schools. Some of these selected subjects—economics, economic history, bookkeeping, banking—rightly have a place in good schemes of commercial education. In the latter case the point of view may be different; the university naturally regards the subject from an academic point of view, which, unfortunately, is by no means always practical. The university professor may treat his subject in such a way that it has no apparent relation to practice; and here is a real difficulty. The man who continually teaches a subject is apt to evolve theories, he is liable to lose touch with practice, even if he ever had it, and from this separation of theory and practice arises the dissatisfaction of commercial men with academic education for business.

The University of London is proposing to extend further recognition to commerce by instituting a degree, or diploma, in commerce. A degree as a test of commercial education can be considered satisfactory only if the syllabus of subjects satisfies those who are engaged in commerce, and if among the revisers to whom the papers are submitted are practical men still engaged in commerce. This demand really means that commercial education is satisfactory only when it is sufficiently practical to satisfy men engaged in commerce, and sufficiently educational to satisfy the reasonable educationist.

Technical commercial subjects<sup>2</sup> can scarcely be considered suitable for advanced courses in secondary schools, and this seems to indicate a rough-and-ready position in which to draw the line between the suitable and the unsuitable. Subjects taught for their educational value alone will readily be recognised as subjects suitable for these new advanced courses in secondary schools, but subjects taught for their utility have yet to win their way. Commercial subjects that are theoretical in character will probably secure recognition, while commercial subjects that are of a practical nature will for some time be left severely alone.

The same line of division should probably be drawn with regard to education for industry. Science for advanced courses will probably be quite general in character, while science especially designed for an engineering course, or science suitable for the dyeing trade, would not meet with recognition.

Technical subjects should, in fact, be taught in separate institutions, the governors, staff, and equipment of which are all specially adapted to their work; and technical commercial

subjects are no exception to this wholesome rule. Commercial men as governors know, or should know, exactly what they wish taught, and they should know where to find the men to teach it; or, if there are none ready—and this is now the case with regard to several subjects which form an essential part of a commercial course—they should, with expert assistance, prepare well-qualified teachers as soon as men of teachable age are again available.

The secondary schools are concerned with the broad basis of a general education common to all the professions and the occupations bordering on them. Of these occupations there are now many connected with commercial life. This, however, does not preclude the secondary schools from getting much nearer to the needs of the everyday life that their pupils will have to lead after leaving school. They could well be at least as educative as they now are while yet dealing with matters of present-day interest, and this could be secured by teaching the history, the languages, and the customs of the peoples of to-day, and the geography and science needed to understand the life of to-day. By schools at which the leaving age is sixteen to seventeen years, and these include a large part of the secondary schools of the country, this could be done, even though the older universities should refuse to move. But to discuss the matter would be to travel away from the subject in hand.

An advanced course, thoroughly sound educationally, the subject-matter of which would be of great use to boys or girls entering commercial life, could undoubtedly be drawn up without including technical commercial subjects, and such would be the better plan—whether it would secure recognition by the Board of Education is another question. Its recognition may probably be delayed, but not for long.

Can a subject be both educational and utilitarian? Undoubtedly, for the different results lie, not in the subject, but rather in the method of approach to them. The separation of education from commerce and industry has been a mistake. Both education and commerce and industry have suffered. Yet to establish a spurious commercial education out of touch with business, guided by men whose business experience is long past, who are becoming academical, and whose commercial ideas belong to a past age, would be useless and a disservice to both education and commerce. Life is not divided into water-tight compartments. School life merges gradually into business life. The abrupt break between one and the other has been responsible for much difficulty in the past. Home, school, and future employers must all work together in unity to bring up a race of

<sup>2</sup> See "Shorthand and Typewriting in Secondary Schools," THE SCHOOL WORLD, September 1913.

capable, patriotic, and responsible business men, and it would seem that their work would be lightened if in all our great centres of industry there were secondary schools providing suitable advanced courses in commercial subjects for those of our youth who aspire to distinguish themselves in the fields of commerce and industry.

### SCHOOL LECTURES.

By ERNEST YOUNG, B.Sc.

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THE Editors of THE SCHOOL WORLD have asked me to give an account of the series of school lectures held during the winter at the County School, Harrow. We have had seven series, each, if possible, more successful than its predecessor. There is nothing very original about their organisation, but the results are interesting, and may be of some value to those who may not yet have embarked on any such enterprise.

There are six lectures to a series, one for each month of the winter and spring terms. They begin at 6.30 and end about 7.30, so that they fit in with the mealtimes both of those who dine and those who sup. Further, train boys and young boys get home at a reasonable hour. The lectures begin promptly, the speaker entering the room at the tick of half-past six. They close, not quite so promptly, but the proceedings are never prolonged by votes of thanks and their wearisome futile accompaniments. Moreover, in the case of paid lecturers there is no chairman : the lecturer just goes into the room, does his work without any preliminaries, and retires at his own good time. When the lecturer is unpaid, a few words of welcome are given. The appropriate thanks, in all cases, are three hearty cheers, called for by the captain of the school. Some variation from this simple plan occurs when there are scout badges or other small rewards to be distributed. These are given away by the visitor at the close of his lecture.

The reason for the institution of the lectures was to raise money. All other results are incidental, but the incidental results shall be mentioned first. When the custom of a monthly lecture was inaugurated, the school was only nine months old and not well known, even locally. The sale of the tickets, to all and sundry, brought many people to our hall who would, otherwise, never have entered it. In this way a strong local support was created for the new institution, a support which has since been extended in other directions and has proved of great value. The lectures have been a most valuable local advertising medium.

They have also provided a rallying point for old boys, for whom special seats are reserved. These reserved seats are sold at reduced prices to all members of the Old Boys' Association, and the privilege thus accorded has helped to popularise that institution. The old boys usually arrange a "social" to follow the lecture, and they linger in the hall for coffee, music, whist, and games, when the ordinary audience has departed.

The many distinguished men who have occupied the platform have done something to give the school a local prestige, and they have done much more for the boys themselves. They have given these boys a kind of pride in their school as a place honoured by many famous men of the day; portraits of these men are afterwards framed and placed in the dining-room with the date and occasion of their visits. These portraits lose nothing in interest from the fact that they are *Vanity Fair* cartoons. An interest has also been awakened in the personalities of a number of leading men, and a kind of link created with some of the main lines of public thought or activity of the moment. Something has been gained also in the extension of general knowledge and consequent breadth of view. The boys have learned "how to behave" at a public meeting, how and when it is desirable to express applause, how to seize a point and appreciate a subtlety. Men of all kinds testify to the excellence of the audience from a speaker's point of view.

But, as already remarked, it was chiefly for financial reasons that the lectures were started. We have made a rule in this school never to ask parents, boys, or governors for subscriptions for anything. It is understood that all incidental expenses are to be met out of the profits on the lectures, and that energy spent in support of the series will bring absolute relief from any further financial demands.

The hall holds about 400 people, and we reckon to sell 450 tickets for each lecture, thus allowing for absentees and yet ensuring a full hall in each case. When most of the purchasers arrive—and that happens sometimes—there is an uncomfortable crush and the boys perch themselves on the window-sills. The tickets cost 1s. for reserved and numbered seats and 6d. for unreserved seats, and there are no "dead heads." Even the governors pay—but, then, they do not suffer from any other financial requests, so that the burden is not very great. We soon found, however, that it was a bit of a nuisance to try to sell 450 tickets six times a year. We seemed to be always asking for money, so we adopted the plan of putting bigger prices, say 3s. or 2s. for reserved seats and 2s. or 1s. for un-

reserved seats, on all the most popular lectures, but of selling the whole set of six for the old price of 6s. or 3s. respectively. (At the present time the war tax is added.) By making the cost of, say, three of the most popular lectures 2s. each, but of selling a set of six for 6s., the public has been persuaded into buying "seasons," and now practically no separate tickets are sold at all. In 1917 the whole of the 2,700 tickets were disposed of in five days and realised about £90.

The expenses are the printing of tickets and of a preliminary syllabus—there are no advertisements or posters—the cost of the gas for lantern lectures, the hire of a few extra chairs, and the fees of those lecturers who are paid. These fees may amount to a considerable sum. We paid one man £27; but we sold tickets to the value of £35. An average of five guineas a lecturer is a fair estimate as to fees. One man will cost more, another less, and perhaps a third nothing at all. The best agency for professional lecturers is the Lecture Agency, Ltd. (Gerald Christy), Outer Temple, Strand. Where the names of the people on the published lists are unknown to the school authority, the advice of the agency may safely be relied on. I shall be willing to help anyone with suggestions as to names. It is often possible to get lecturers at reduced rates if dates are chosen when they have other engagements in the same neighbourhood.

Obviously, the more unpaid lecturers one gets, the larger the contribution to the school funds. Where there are really first-class local men, these may be drawn upon. Distinguished public men are not to be had for the asking. They can be obtained only through the services of friends, and they cannot be paid—that is to say, they either come for nothing or not at all. This last term we have had the brilliant help of Mr. Hall Caine ("The Spirit of France"), Mr. Charles Garvice ("The Use and Abuse of Fiction"), Sir George Riddell ("The Making of a Newspaper"), and Mr. J. L. Garvin ("Francis Thompson"). During the previous season there came to our assistance Sir James Yoxall ("On Collecting Old Furniture"), Bishop Frodsham ("In the Never Never Land"), and Mr. F. Wile, formerly Berlin correspondent of the *Daily Mail* ("Germany To-day and To-morrow"). During the last seven years we have welcomed many men of note, but we owe most of them to a devoted friend of the school whose life-work brings him in touch with many of the leaders of modern thought and action.

The subjects of the lectures do not matter much. It may be laid down, as a fairly good rule for the making of an attractive programme—attractive, that is, from the point of view of

ticket-selling to the general public—that either the subject or the man must be popular. For instance, Mr. Garvin lectured to us on "Francis Thompson." It is questionable whether the subject would have packed the hall from end to end; but the distinguished editor of the *Observer* did. In other cases it is the subject that attracts, and, provided that the lecturer can be recommended, the fact that he is unknown to fame is no drawback. But a high standard has to be set up and maintained. The lecturers supplied gratuitously by various Colonial and other agencies are, as a rule, to be avoided, for they are generally rather poor stuff, and people will not continue to patronise a lecture course unless it can compete with other local attractions. As a matter of fact, the critical faculty of the boys is so developed by a sustained diet of really good things that they soon disapprove of mediocre people or ineffective treatment. It is worth while, in this connection, to record a thoroughly appreciative remark of a twelve-year-old member of one of our audiences. He had listened to a very brilliant intellectual performance, far beyond his comprehension, and on his return home greeted his father with, "I wish you had been there. It was a magnificent lecture, and I only wish I had been old enough to understand it." How the feeling of appreciation grows, even in the days of the "pictures," may be gathered from the following incident. Mr. Hall Caine had lectured to us on "The Spirit of France" and given us one of the most moving and dramatic addresses I have ever heard. The address was followed by an exhibition of some of the French Official War Films. (Incidentally, I may mention that the loan of these may be obtained for nothing, and would prove a great draw.) A small boy, on being asked how he had enjoyed the lecture, replied, "Topping! But what did they want the pictures for?"

A few more words as to organisation: the first few rows of seats are given up entirely to the boys, chiefly the younger ones. These are followed by the reserved and numbered seats. Behind these are the rows specially kept for the Old Boys, and finally come the unreserved seats. After the lecture has once begun the numbers on the tickets are not adhered to. Late comers have to get in where they can and receive no assistance from us. Punctuality is an extra-special virtue on these occasions.

A staff of boys is trained to take tickets, to act as barriers between the various rows of seats, to show people who arrive in time where their seats are, and to keep a look-out for odd empty seats so that all may listen without the discomfort of standing provided they come in time. The school staff is unemployed. The boys take

entire charge of the arrangements under the direction of the captain of the school. As one boy leaves school, another is appointed to fill the office he has vacated. Each boy, during his school career, keeps the same duty, so that there is never any confusion, and the machinery works with uniform success and absence of friction.

The funds are kept entirely under our own control, but a balance-sheet is presented to the governors when the money has been spent. We have bought a £100 grand piano, financed all the school societies and the scout troop, paid for legal and other advice for boys, helped poor ones to a holiday or another term at school, assisted the Old Boys' Association in times of distress, contributed to sundry charities, and added to the school collections of books, pictures, and lantern-slides.

With the profits on the school sports and one or two other little things, we have raised and spent on various school activities about £1,100 in the seven years we have been in existence. The parents, it is certain, very much appreciate the bargain made with them—support our public functions and no other requests for financial assistance will be made.

#### EXAMINATION ERRORS IN GEOGRAPHY.

By B. C. WALLIS, B.Sc., F.R.G.S.

AS long ago as 1901, Mr. G. G. Chisholm<sup>1</sup> commented upon prevalent misconceptions in geography as a result of his experiences as an examiner. It would seem advisable to repeat his comments at frequent intervals, since the faulty ideas he noted still prevail. Typical errors of those days were: "Mountains *attract* rain," "The Rhine flows to the Alps, *giving off* different tributaries by the way," "Montreal is on the St. Lawrence *below* Quebec," "All the trade of Germany passes through Hamburg." Such errors still recur, though possibly with less frequency than seventeen years ago. But the content of school geography has so increased in quantity and so changed in character that another group of misconceptions has arisen, and it is the purpose of these notes to direct attention to these unfortunate developments.

Probably the most frequent source of error occurs in the use of technical terms. Such a term is a convenient phrase which has come into general use to summarise a definite set of facts, and the pupil should pay close attention to the facts which are excluded, as well as to

those which are included in the term used. For example, "winter rains" do not mean the rains which fall during the months from September through January to March. They signify the rainfall which occurs during the cool months of the year, provided that there is little or no rain during the hot months; the term is an abbreviation for "winter rains and summer droughts," and its applicability depends upon the absence of rain during the hot season.

In similar fashion the term "forest" excludes grass country and woodland. It is well to distinguish clearly between the forest with its tall trees growing so closely together that there are few branches, and the stems are straight, and the overhead canopy of foliage is almost continuous, and the woodland, mistakenly called forest in Epping Forest, where the trees grow with extensive lower branches, crooked stems, and sufficiently far apart to permit the growth of grass at intervals. True forest has no grassy glades. The "prairie" and the "steppe" are terms which imply the presence of grass, but they also imply the absence of trees. Prairie and forest imply types of vegetation which are in sharp contrast; between them lie the intermediate types to which the terms "park land," "savannah," "mixed woodland and grassland" are applied.

This idea suggests another potent cause of misconception. For the sake of clearness in exposition various factors are isolated from their true surroundings, and the pupil is apt to consider the artificially isolated factor entirely by itself. But Nature is continuous, there are no sudden breaks or jumps, and the pupil should be guided first and last by this principle of continuity. For example, it is usual to describe a cyclone as if it were an independent phenomenon; but for every area of low pressure there is a neighbouring area of higher pressure, and the results of the storm depend on the whole of the conditions, the "high" as well as the "low." Consequently, in an examination or in a classroom answer to a question concerning a type of pressure distribution the whole of the conditions should receive treatment, and in the diagram which illustrates the answer areas of both high and low pressure should be indicated. The two should never be separated in the discussion of a practical question which approximates in any degree to real conditions. The whole idea is summarised in the use of the term "barometric gradient," which should provide the dominant note in any description of the results which accompany any type of pressure distribution.

A second instance of this kind of error

<sup>1</sup> "Common Examination Errors." III. Geography. By Geo. G. Chisholm, M.A., B.Sc. THE SCHOOL WORLD, February, 1901. Pp. 49-51.

occurs in the drawing of contoured diagrams to suit an area described verbally in the examination paper. In the case where the candidate is asked to draw a representation of a ridge with a culminating point on the western end, a steep scarp along the northern face of the ridge, and spurs leading south-east and south-west from the western end, the usual drawing submitted to the examiner attempts to indicate these items more or less successfully as separate units, but the diagram as a whole lacks harmony, and the parts are frequently inconsistent with each other. In the above illustration the peak and its two spurs are drawn, but no care is taken to connect the spurs with the peak or to make the valley formation between the spurs consistent with the general appearance of that part of the map.

In addition to this fundamental error in a contoured map, candidates should be warned against showing a mountain with a maximum height of 550 ft., or an inland area of land below sea level far removed from the coast. Contour intervals should be regular; for example, the sequence 100, 300, 600, 1,000, 1,500 ft. is bad; while the sequence 100, 500, 1,000, 1,500 ft. is admissible, if the 100-ft. contour is essential to the map. It is not unnecessary, even, to remind the candidate that contour lines should not cut each other and should have the same number throughout; and also that rivers bear some relation to the V-shaped bends on the contour lines.

A misconception of considerable importance frequently arises from the careless use of technical terms; for example, it is a common error to say that the Trent or Mersey is a navigable river. The term "navigable" should never be used alone, since the word may apply to the use of a rowing-boat or an ocean greyhound. But the error is considerably aggravated when the candidate adds that the navigability of the Mersey is a cause of the importance of Manchester. This question of navigability is so important that it merits considerable attention.

In the first place, it may be laid down for the sake of definiteness that no British river is navigable. Many of the big estuaries are navigable, some of them with considerable difficulty, so that, for example, the Hull pilot meets his ship far from Hull in order to guide the vessel through a difficult and tortuous channel. The term "navigable" is used for the moment with reference solely to ships that carry on the foreign trade of Britain—ocean-going vessels. The choice of this interpretation is deliberate, because it is a matter of prime importance that the pupil should distinguish between the broad estuaries of Britain and the comparatively insignificant

streams which flow into them; it is not the rivers that make the estuaries—the latter are due to the relief of the land, and their usefulness depends almost entirely upon the scour of the tides. What would be the value of Liverpool as a harbour, although it is at the mouth of the estuary, without the tidal scour and the continuous work of some of the most powerful dredgers in the world?

The Thames has been said to be navigable to Lechlade. Consider the river at London Bridge, Reading, and Oxford. East of London Bridge small boats in the Continental trade, such as the Batavier liners which go to Rotterdam, and coasting vessels for Cork and Leith, manage to reach a wharf within sight of the bridge. West of the bridge the traffic is by barge and lighter. Deep-sea ships stop lower down the estuary; nothing of any size passes the bridge up-stream. What of the river at Reading? Small-sized passenger steamers travel up-stream to Reading, a slow, toilsome journey from the numbers of locks to be negotiated. At Oxford small toy steamers carry passengers during the summer season. At Reading and Oxford the Thames is a "play-ground" and little else.

Turn from Britain to the Continent and consider the Seine and the Rhine. Paris is a river port, *for barges*. The Seine forms a pleasant summer highway for the Parisian, but its usefulness is strictly limited. At Rouen only comparatively small ships can reach the wharves, and it were wiser to say that the Seine is not a navigable river. The Rhine makes such an imposing display upon the map that it is surely a navigable river. The Germans have spent considerable sums upon improvements in the river, and to what end? Merely to make it into a rather large-sized canal. Stand anywhere on the river bank between Cologne and Mainz and pay attention to the character of the traffic. It is limited to two classes of vessels, passenger steamers, comparable in size with those which serve the summer traffic to the Isle of Man, and steam-tugs with an attendant string of barges. The Rhine is a navigable canal, not a navigable river. It must be noted, however, that the Rhine is useful; the Thames is of slight importance to Reading, but the Rhine contributes to the trade of Coblenz, Mannheim, Mainz, and Strasburg.

The Congo is navigable for ocean-going ships from the sea to Matadi, a distance of 100 miles. Then rapids intervene for 200 miles, and navigation becomes possible from Stanley Pool to Stanley Falls for about 1,600 miles. But the boats are merely river steamers, small in size and of light draught, usually propelled by paddle-wheels in the stern. The tributaries

of the Congo are said to be navigable for considerable distances. But the vessels must be small, and the Congo rivers are used not because of their navigability, but because the absence of other means of transport forces Europeans to navigate the rivers and to maintain frequently a constant struggle in order to transport heavy goods with very considerable difficulty. A trip on a Congolese river frequently means using a boat which is overcrowded when it has four passengers and which is tied up to the bank during the hours of darkness, partly owing to difficulties of navigation, but chiefly in order to allow the traveller to pitch a camp for the night, as there is no room to sleep on board.

Under modern conditions it is not the rivers which are useful, but the valleys which they have made. Everywhere railways follow such valleys, and wherever they compete for traffic the railways beat the natural waterways. Rivers lack the modern essential, mobility.

There are the constantly recurring misconceptions regarding ports and their importance. "Liverpool is important because it is *opposite* America." "Glasgow owes its importance to its *good estuary*." "London is important as a port because of its *hinterland*, the Eastern Counties provide it with grain to export, and Kent supplies much fruit for the jam which is exported." The fundamental fact of importance about ports in general is that in most countries there are not more than two great ports, and, therefore, in discussing the importance of a port the best form which the answer would take is a comparative statement of the facilities which one port has with reference to the other ports of the country; for example, the importance of Havre can be well brought out by a comparison between Havre and Rouen, Dunkirk, Dieppe, Cherbourg, St. Malo, and Brest respectively.

In connection with the use of the word *opposite*, a few facts about ocean freights may be examined. The freight on cotton from New Orleans per 100 lb. averaged 1s. 4d. to Liverpool and 1s. 4½d. to Bremen, while from Savannah the charges were 1s. 2½d. and 1s. 1¾d. respectively. Similarly the freights on 100 lb. of provisions from Chicago were 1s. 10½d. to Liverpool, 2s. 2d. to Glasgow, 2s. 1d. to London, 2s. 2d. to Antwerp, and 2s. 2d. to Hamburg. The use of the word "*opposite*" implies that Liverpool gains because the distance to America is shorter from Liverpool than from London; but the difference in distance is less than 300 miles in a journey which exceeds 3,000 miles, and ocean freights, unlike railway freights, do not depend mainly

upon the miles which the goods are carried. They depend much more upon competition between steamship companies which wish to secure the freight.

Some errors are due largely to an attempt on the part of the candidate to tackle a question that is beyond his powers. The first subject in which this difficulty arises is in connection with ocean currents. Candidates frequently explain the surface currents of the ocean in terms of the convection current experiment which may be made in a laboratory with a piece of ice at one end of a tank and a Bunsen burner at the other. This attempt indicates inability to grasp the subject at issue. Erroneous ideas are, further, introduced by those candidates who attempt to explain the influence of the earth's rotation, and yet are unacquainted with the mechanical laws governing motions in fluids. Such candidates would be better advised, if they *must* attempt such a question, to describe not only the facts regarding ocean currents as they may be examined in the monthly charts published by the Meteorological Office, but also the correlated facts concerning wind velocities and directions which are indicated in the same charts. School candidates should rarely deal with theoretical explanations of ocean currents; such work rather belongs to a post-school course. The ever-recurrent difficulty in relation to the Gulf Stream and the Gulf Stream Drift illustrates this dictum excellently. For years teachers have attempted to deal adequately with the question of the Gulf Stream, and the examination answers show similar misconceptions year after year. It is but fair to conclude that the question is too difficult for school geography, which should be content, in this case, to indicate certain sets of observed facts and to stop at that point.

A similar difficulty due to inability to grasp the principles of the mechanics of fluids arises in connection with the barometer. Candidates fail to grasp pressure distribution as a whole. This matter was considered above from another point of view.

A second series of misconceptions arises in connection with the term "*region*." The world may be divided into rainfall regions, regions of natural vegetation, natural regions, and general regions. The rainfall and natural vegetation regions are fairly simple and serve excellently to introduce ideas about the continuity over the earth's surface of various types of natural phenomena. The natural regions are based upon climatic and vegetation factors in combination and are therefore more elaborate, so that the pupil frequently learns a set

of technical terms such as the "China type," which he usually uses incorrectly in an examination answer. Such a division of the world into units is a great strain upon the analytical powers of school students of geography.

Erroneous ideas are presented very commonly in connection with questions which deal with history and geography in combination. Candidates may be asked to account for the importance of Manchester as the centre of the cotton industry, or of London as a capital. It is not sufficient to write that Manchester is in Lancashire, where the climate is suitable to the spinning of cotton, or that it is in the west of England, which is the side nearer to North America, whence comes the raw cotton, or that the salt mines of Cheshire and the coal mines of its own district contribute largely to the efficiency of its machinery and its bleaching works; or to write that London is at the head of a large estuary on which the English railways concentrate, or that it has a large trade because it is near the Continent, or that it contains the Houses of Parliament. Such remarks have little value, since they betray a misconception of the question set.

Moderately good answers might be written on what is called the comparative method. It might be indicated how Manchester excels the cotton centres of Scotland, France, Germany, and New England; or how London differs from Edinburgh, Paris, Berlin, or Washington. Such a method necessarily would involve historical references and might yield good results.

Equally good answers might be obtained by what may be termed the inductive method. General principles might be enunciated regarding the best qualities which are required for a centre of the cotton trade, or for a capital. Candidates who use this method, however, are usually too immature to make an adequate analysis before enunciating general principles, and commit themselves to such statements as "Centres of cotton manufacture must be near to large supplies of raw material," or "Capitals should be situated in the midst of a dense population," or "Capitals should be on the sea coast." The result usually develops into an excellent example of special pleading.

Neither of these methods can be considered as satisfactory, since the main emphasis in the answer should be historical. In the case of Manchester the answer should begin with the Industrial Revolution and show how the city has emerged as "Cottonopolis" as a consequence of a century and a half's progress which has seen the change from a provincial town of small importance and a small popula-

tion to the centre of one of the densest populations in the world, because it has attracted human beings in thousands to its factories and warehouses. Attention should be directed to the history of cotton manufacture in such a way as to show that Manchester has benefited by, if it has not inaugurated, each stage of development. The physical environments of the city—the relief of the land, the coal mines—should be mentioned in relation to their effect upon the processes of manufacture and of marketing cotton in the periods of pack horses, of canal traffic, and of railways, while the energy of the Mancunians in their support of the first barge canal, the first railway, and the first great ship canal in Britain should receive attention.

Similarly, the case of London as a capital involves an epitome of the history of England and of the British Empire. The candidate should present a vision of the great European plain with the situations of London, Paris, and Cologne in relation to it and to each other; of the traffic routes by the Rhine and Seine valleys and the effect of the "silver streak"; of the Low Countries and their relation to East Anglia. Such a vision should dominate the epitome of history until the days of Cromwell. Then comes the later vision, that of sea power and colonial expansion and the position of London on the west coast of Europe, whence the great sailors all departed to explore and colonise the world; London in Europe, but not on the Continent; London a port and a great market, free from the land rivalries and without a great army, but with the stimulating influence of a great merchant fleet.

Finally, the principle of persistence should be applied—every great progress in traffic facilities tends to concentrate population and power more and more at the traffic centres which previously existed. Progress in locomotion tends to augment congestion rather than to relieve it. Consequently, London was able to retain its power and position as a centre of national life in the face of industrial development and commercial progress in the North of England.

The above ideas imply a treatment of the question which exceeds the possibilities of the examination room both in the time available for the answer and in the calibre of the candidates. Such a difficulty must be recognised, but it may still be urged that candidates should not attempt questions of this character unless they are prepared to suggest in their answers some of the main lines of historical development. It is possible for a candidate to imply, within the limits of one page of foolscap, that he is familiar with the main features

of the outlook down the main vistas of history. Questions of this kind appear in examination papers and examiners expect that candidates will not misconceive their purport. Geography implies outlook not only over the wide spaces of the world of to-day, but also over the spacious times of bygone ages.

### THE NOTE-BOOK IN MODERN LANGUAGE TEACHING.

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THE intermediate period in the evolution of the direct method of language teaching is now drawing to a close. The wild enthusiasms of the earliest days, when conversation was held to be everything, have been succeeded by a far too considerable rebound in the direction of study of grammar, elucidation of every difficulty, etc., in the mother-tongue. To-day it is perceived by many earnest and thoughtful teachers that to under-study Mr. Facing-Both-Ways is to court disaster. A half-hearted use of "direct method" principles results in failure in every direction. The boy who is allowed to lapse into mother-tongue once will do so increasingly, and will soon be unable to do anything else. Diligent experiments, also, are being made to ascertain whether it be not possible, solely in the language concerned, to teach French or German, Spanish or Russian, and that in such fashion as to gain accuracy and understanding in reading, hearing, writing, and speaking.

In these experiments one all-important adjunct is the note-book. So much is this recognised to be the case that various publishing houses have placed upon the market note-books of differing arrangement and size. Some of them are divided into nicely calculated tiers of pigeon-holes or boxes, wherein to imprison a word immediately after capture. In others, words already imprisoned are shown peeping expectantly from their little cells as though to invite others to walk in and share their particular "parlour." Undoubtedly some scheme of arrangement is a necessity, if one is to avoid hopeless confusion and to use the note-books for that repetition which alone can ensure a good vocabulary. The present writer has found the simplest plan to be that of having nouns written on the right-hand pages, adjectives and adverbs on the upper, and verbs and idioms on the lower, left-hand pages. In practice this works out at a reasonable division of space.

As soon, however, as some general scheme of entries has been adopted the difficulty arises as to how the entries are to be made. If one is

to write down simply that *le réverbère*=gas-lamp, and every fresh word on similar lines, a great deal of the lesson will evidently consist of exercises in translation, and constant use of the mother-tongue be entailed. If, on the other hand, the note-book is filled with long strings of words, like *le réverbère*, *l'hypothèque*, *la citrouille*, *quêter*, *cramponner*, *rutiler*, then revision will become an impossibility, for each time such columns are revised the meaning will need to be re-ascertained—a sinful waste of valuable time. It is in face of such a dilemma that the method of entry by definition is here commended.

By this method entries of the kind illustrated below would be gradually accumulated. One may add that not only have those given been excerpted from note-books in actual class use, but also that they were in every case invented by pupils and approved of by the class, as giving help adequate to all future identification of the word

#### FROM RIGHT-HAND PAGE.

*le fourgon*=*le wagon dans un train où nous plaçons nos bagages.*

*la bêche*=*outil avec lequel nous préparons le sol pour recevoir nos pommes de terre.*

*das Schaltjahr*=*Jahr von 366 Tagen.*

*die Erziehung*=*was ich von meinen Lehrern und von dieser Schule bekomme.*

*un centauro*=*monstruo antiguo, mitad caballo, mitad hombre.*

*una cuna*=*cama para un nene.*

#### FROM LEFT-HAND PAGE.

*tâter*=*toucher avec le bout des doigts.*

*entscheiden*=*von zwei Dingen sagen, welches das Richtige sei.*

*eifersüchtig*=*wer besseres Lob als sein Nachbar haben will.*

*appear*=*desmontar de caballo o de vehículo.*

*à ma guise*=*en toute liberté=comme je veux.*

It were an easy task to pick holes in many of the foregoing as definitions, to discourse learnedly indeed concerning the extreme difficulty of all definition, and particularly of definition in a foreign, imperfectly understood, language. On the other hand, the method of entry by definition comprises so many distinct advantages that it is able not merely to justify its existence and use, but even to claim a place as an indispensable ally in the operations of the Modern classroom.

In the first place, it ensures the constant retention of the foreign language. The frequently voiced objection that some explanations *must* be given in English has been shown to have no solid foundation. All depends on

the work in the earliest Forms. If in Forms II. and III. every unfamiliar concept be explained by an English equivalent, it will clearly be impossible in Forms IV. and V. to teach the use of German attributive adjectives or the subtleties of French pronominal verbs in any other language than the mother-tongue. The only case in which English in any shape or form might be permissible in the note-book would be in those rare words (names of trees, animals, flowers, and the like) which are not capable of definition or exact description. So we find :

*érable=arbre du Canada (maple).*

*la grive=oiseau qui chante dans nos jardins (thrush).*

And in these cases the word in brackets is written very small, so as not to "jump to the eye" during rapid revision.

Almost equally important is the way in which such note-book work helps in solving the problem of accident, one ever-recurrent, at any rate, as far as the end of the Fifths. It is of no small assistance in this direction to be constantly drafting and jotting down phrases like

*l'homonyme=deux mots qui sont épelés différemment, mais qui sont prononcés de même; or*

*la herse=instrument à dents qu'on tire à travers les champs après que ceux-ci ont été labourés.*

And the many attempts to give the best definition (as, e.g., *la grêle=petites pièces de glace qui tombent du ciel; de la pluie gelée; sorte de neige, mais plus gelée et plus dure*) are all gain so far as accident is concerned. In fact, our whole reading is thus accompanied, if one may so speak, by an undercurrent of *dictée*. Yet this is in many respects better than the *dictée* proper, for, whereas the latter is often but a sequence of unknowns, the note-book method necessitates a constant linking on of knowns to unknowns.

Another and most patent advantage is the impetus that is given to conversation. How difficult it is to educate real conversation—not the brainless dissection of language so often fostered by the vaunted *questionnaire*, but conversation which shall correspond with real thought-processes. Animated discussion concerning the merits of varying definitions, however, is a natural outcome of the method now advocated. One cannot easily forget the heat which sprang up among our would-be men of science aenent *l'éclair* and *le résultat électrique de la rencontre de deux nuages dans le ciel*, or *die Ehre*, which was finally set down (a wholly inadequate definition, but one never to be

forgotten by that class) as *die Eigenschaft, die man nie entbehren muss.*

Frequently two birds may be killed with one stone, and that without altogether incurring the reproach of *obscurum per obscurius*. Thus by means of a definition like

*le paillasson=la natte=sorte de tapis au vestibule pour essuyer les pieds dessus,*

both *paillasson* and *natte* are annexed. Similarly,

*toutefois=pourtant=cependant,  
daher=darum=deshalb,*

and even

*der Zwist=der Hader=der Zank=der Streit,*

where, by the help of one known *Streit*, three wholly new words are taken over, along with their allied verbs and adjectives.

Every language learnt can be commandeered in case of need, particularly where rapidity is desired or where definition is difficult, e.g.

*wählen=choisir.*

*avertir=monére.*

*der Pfirsich=la pêche.*

*geschickt=wenn man ein Ding gut tun kann  
=habile.*

*la nutria=la loutre=die Otter.*

Nor is an entry to be refused because of its oddity. On the contrary, many of the words best gripped have been learnt because of some whimsicality of expression used in writing them down; for once get an appreciation of humour into a class and half your battle is won. A few recent curios run as follows :

*die Angst=was mein Lehrer über mein Deutsch fühlt.*

*das Gemüt=die Atmosphäre des Herzens.*

*la tige=le tronc mince d'une fleur.*

*die Träne=Salzwasser aus den Augen.*

*le tourteau=gâteau "à huile" que mangent les bestiaux.*

*neugierig=wenn man die Nase in alles stecken will.*

The method of note-book entry by definition has come to stay. To a remarkable extent it preserves in a class the constant atmosphere of the language which is being learnt, since every single definition coined means greater familiarity with that language; and it secures that by the time a pupil has reached the Sixth he shall be ready to use intelligently the Petit Larousse or *Toro y Gomez*,<sup>1</sup> and with them to enter into all those realms of gold which they are eager to reveal to the enthusiastic word-hunter.

<sup>1</sup> Unfortunately, no equally handy and cheap German dictionary seems to be obtainable.

## PERSONAL PARAGRAPHS.

THE appointment of Dr. Arthur Caley Headlam, as Canon Scott Holland's successor, to be Canon of Christ Church, Oxford, and Regius professor of divinity at the University of Oxford, will be cordially welcomed. Dr. Headlam is widely known as an eloquent and learned theologian, and, as principal of King's College, London, from 1903-12, and a member of the Senate of London University from 1903-13, he has rendered invaluable service to the college and the cause of higher education. During his ten years at King's the college was incorporated in the University of London, the scheme for its re-organisation was carried out, and its finances were put on a more satisfactory basis.

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THE Rev. E. G. Selwyn, the retiring warden of Radley College, has been presented by the boys with a handsome silver bowl. In making the presentation, H. G. Selous—the senior prefect, and son of the late Capt. Selous—referred to the important alterations in the life of the school carried out by the warden, particularly the introduction of Rugby football. In replying, the warden thanked the boys for the token of their affection, and expressed the hope that the increase in numbers which the school had made during the last few years would continue, and that its high reputation would be maintained in every way.

\* \* \*

THE Lancashire Education Committee has decided not to proceed with the appointment of a new director of education for the present. The committee was unanimously of opinion that the services of Dr. Snape would be invaluable in connection with the new conditions and changes arising under the clauses of the Education Bill. Dr. Snape has consented to continue in office for a time provided arrangements were made to relieve him of some of the routine work and attendance at meetings which had overtaxed his strength in the past.

\* \* \*

ADMINISTRATIVE circles will warmly welcome the news of the withdrawal of the resignation of Mr. A. C. Coffin from his position as director of education at Bradford. The resignation was referred to in these columns in the April issue. The Bradford Education Committee passed the following resolution at its meeting on May 7th last:—"That the committee has heard with pleasure of Mr. Coffin's restoration to health and of his offer to withdraw his resignation, which is gladly accepted by the committee."

MR. E. O. TAYLOR, inspector and assistant to the St. Helens Education Committee, has been appointed secretary to the Edmonton Education Committee. Educated at Longwood Grammar School, Borough Road Training College, and the Technical College, Huddersfield, Mr. Taylor graduated in Arts in 1898 and in Science in 1902 at London University. He was formerly headmaster of the Higher Grade School, North Road, St. Helens, and is the author of "An Introduction to Geometry" (Clarendon Press).

\* \* \*

A FUND is being raised for the placing of an organ in the hall of the Mary Datchelor School, Camberwell, to commemorate Miss Riggs's forty-one years' work as headmistress.

\* \* \*

MR. H. NORMAN RAE has presented the sum of £10,000 as a fund for the provision of scholarships for girls in the West Riding of Yorkshire. Mr. Rae's gift was actuated by his pronounced opinion that girls have not—under present conditions—the same opportunities as boys for acquiring education, and by his intense desire to improve educational facilities in his native district.

\* \* \*

MR. E. T. GRIFFITHS, modern language master at Newport Intermediate School, has been appointed headmaster of Llanfyllin County School, Montgomeryshire. Mr. Griffiths has had considerable experience as a member of examining bodies, including the Joint Matriculation Board for the Northern Universities and Birmingham, the panel of examiners for degrees at London University, and the examiners for degrees at Manchester University. He had also acted as senior lecturer in French at Manchester University.

\* \* \*

MR. WILSON JAGGER, associate of the Royal College of Art, has been appointed headmaster of the School of Art at the Technical College, Cardiff, in succession to Mr. James Bush, who recently resigned. Mr. Jagger has been the assistant at the school for twenty-one years, and received his early training at Bradford Technical College.

\* \* \*

THE Rev. Adam Fox, late of Lancing College, has been appointed warden of Radley College. Mr. Fox was educated at Winchester College and was an exhibitioner of University College, Oxford. Appointed to take the Sixth Form at Lancing in 1906, he became a housemaster in 1913, and during the last few years has been in command of the college O.T.C.

He was ordained in 1911, and had recently accepted a mastership at Winchester. Mr. Fox will take up his work at Radley after the summer holidays.

\* \* \*

THE council of the Girls' Public Day School Trust has appointed Miss Mabel E. Lewis, Class I., Classical Tripos (Newnham), to be headmistress of Wimbledon Hill High School for Girls, and Miss Dorothy L. Walker, Class II., Part I., and Class I., Part II., Classical Tripos (Girton), to be headmistress of South Hampstead High School for Girls in succession to Miss Benton, who is retiring. Miss Lewis is at present headmistress of Southend High School and was formerly headmistress's deputy at the school to which she now returns as headmistress in succession to the late Miss Gavin. Miss Walker is on the staff of the Leeds High School for Girls.

\* \* \*

THE death is reported, at the age of eighty years, of Dr. John Rundle Cornish, Bishop Suffragan of St. Germans, in the diocese of Truro, for the past thirteen years. Born at Tavistock and educated at Bideford Grammar School and Sidney Sussex College, Cambridge, he was fourteenth wrangler in 1859. He became fellow, dean, and Taylor lecturer in mathematics of Sidney Sussex, and took Orders in 1863. He was afterwards appointed principal of Truro Diocesan Training College and acted as examining chaplain for many years to the Bishops of Truro.

\* \* \*

DR. IVOR THOMAS, H.M. Inspector of Schools for the district of Swansea, died on March 30th, in his forty-fifth year, after a very brief illness. Dr. Thomas was a native of Glamorganshire and, after training as a pupil teacher, became an assistant-master at Brynmawr County School. He then attended Marburg University and obtained his Ph.D., returning to England to join the Geological Survey in London. For his valuable research work in this connection the University of Wales conferred upon him the degree of D.Sc., and in 1912 he was appointed to the inspectorate. He was characterised by a modest and sympathetic nature, and his death is deeply regretted in educational circles in Swansea.

\* \* \*

THE death is announced from India of Prof. James N. Fraser, principal of the Training College for Teachers in Government Secondary Schools, Bombay. Educated at Rossall School and Balliol College, Oxford, he was appointed professor of English literature in the Deccan College, Poona, in 1896. A traveller

and a linguist, he acquired an extensive knowledge of the educational system of foreign countries. He made considerable researches into the fields of Oriental lore, and his contributions to literature include many studies and translations of the saints and poets of the Deccan.

\* \* \*

THE educational work of Nottingham has sustained a great loss in the death of Mr. Edward Francis, who for thirty-five years has held the position of headmaster of the High Pavement Secondary School. At the last meeting of the Secondary Schools Sub-committee, the chairman, Mr. W. E. Morris, paid a high tribute to the work of Mr. Francis as a prominent member of a small band of pioneers, fighting for many years for the needs of higher education and secondary schools and as a capable and loving teacher. Mr. Francis was educated at the Bristol Trade and Mining School, the Royal College of Chemistry, and Cheltenham Training College. He was appointed principal of the People's College, Nottingham, in 1883, and he had completed nine years' service as headmaster at High Pavement School. He was the author of "A Laboratory Note-book" and "Chemical Diagrams," and his many papers on original researches include "Boiler Incrustations," "Furnace Residues," "Bacteria Counting," "Discrimination of Starches," and "Estimation of Small Amounts of Iron in Natural Waters."

\* \* \*

THE technical world has suffered a great loss in the sudden death of Mr. C. E. Handy, principal of the Darlington Technical College. Mr. Handy was formerly principal of Elswick Technical College and previously head of the engineering department at Portsmouth Technical College. He was an active member of the Association of Teachers in Technical Institutes, having been a member of the council of that body for several years. A man of keen energy and much promise, Mr. Handy has been a strenuous worker in the interests of technical education for many years.

\* \* \*

MAJOR H. P. B. GOUGH, M.C., Welsh Regiment, who died on April 22nd from shell wounds received on April 13th, was science master at Oakham College on the outbreak of war. He was gazetted to a Welsh regiment early in 1915, went to France in 1916, and was awarded the Military Cross in August, 1917, followed by a bar in November of the same year. He received his early education at Llandover College and became a scholar of Sidney Sussex, Cambridge, obtaining a first

class in the Natural Science Tripos in 1902. He formerly held teaching appointments at Neuenheim College, Heidelberg, and Lancaster Grammar School.

\* \* \*

CAPT. M. W. C. SPROTT, son of the Bishop of Wellington, New Zealand, who was killed on March 21st, was a master at Victoria College, Jersey, when war was declared. He received his commission in 1914 and had since served continuously on the Western front. He was severely wounded in the Somme offensive and his gallantry was mentioned in dispatches. In March, 1917, he was awarded the Military Cross and promoted captain and adjutant. His C.O. writes that he was one of the bravest and best officers in the regiment and a real friend to all. He was an assistant-master at Wakefield Grammar School in 1910-11 and had been on the teaching staff of Victoria College since April, 1911.

\* \* \*

LTCOL. A. R. HAIG-BROWN, D.S.O., Middlesex Regiment, who fell on March 25th, was the youngest son of the late Canon Haig-Brown, Master of Charterhouse. A scholar of Charterhouse, he graduated at Cambridge. He took his "Blue" for Association football and represented his college at cricket and running, winning many prizes on the track. He was one of the keenest in sports—an angler, a game shot, and a rider. The author of "Sporting Sonnets," "My Game Book," and "The O.T.C. and the Great War," he contributed many poems and articles to the Press.

\* \* \*

ANOTHER schoolmaster who has sacrificed himself for his country is Major Sydney H. Baker, senior science master at Abingdon School, whose death on March 23rd is reported. Educated at Bristol Grammar School, he gained an open science scholarship at Jesus College, Oxford, and graduated with third-class honours in natural science in 1903. He studied chemistry at Charlottenburg for a year, and after a short period as science master at Loretto he took charge of the science at Abingdon. Gazetted in 1915, he was soon promoted captain and became intelligence officer in France and major in Salonika in 1916. Invalided home, he passed through the senior officers' course at Aldershot and returned to the front, taking part in strenuous fighting.

\* \* \*

2ND LIEUT. R. B. SANDERSON, R.G.A., who died of wounds on April 17th, was the son of Mr. F. W. Sanderson, headmaster of Oundle School. Educated at Oundle, he gained a scholarship at Queens' College, Cambridge, and graduated in the

Mathematical and Mechanical Science Tripos. He became a pupil under Mr. Trench, the chief engineer of the L. and N.W.R., and was afterwards appointed to the staff of the Royal Naval College, Osborne. Given leave of absence by the Admiralty, he was gazetted in the R.G.A. and went on active service. He had been invalided home for a year, and had just returned to the front when he fell.

\* \* \*

FRIENDS of the Central Foundation Girls' School will be interested to hear that Miss S. D. Machell is severing her long connection with it at the end of this term. Miss Machell has been second mistress for twenty years, and her work in the school as girl and mistress has lasted for forty years, thereby forming a link between the old history of the school as the Bishopsgate Ward School, and its new life as the Central Foundation School belonging to the Dulwich Foundations. Miss Machell's friends wish to offer her on her retirement some tangible mark of their appreciation of her work. Mrs. Gourvitch Blom, secretary of the Presentation Committee, Central Foundation School, Spital Square, E.1, will gladly give fuller information to anyone who cares to write to her.

ONLOOKER.

#### POSITION OF MODERN LANGUAGES IN OUR EDUCATIONAL SYSTEM.

By WALTER RIPMAN, M.A.

THE Committee appointed by the Government in August, 1916, to inquire into the position of modern languages in the educational system of Great Britain has now issued its report (Cd. 9,036; price 9d. net). The space at my disposal will not allow of any exhaustive discussion of it; nor is this necessary. In the first place, it should be read and taken to heart not only by everyone actively concerned in education, but, indeed, by every thinking person that loves his country; and in passing I may be allowed to express my regret that Government publications are issued in such an extremely unattractive and inconvenient form:<sup>1</sup> could we not have a library edition of this report, say at half-a-crown, that could be placed on an ordinary bookshelf? In the second place, I should be rather at a loss to criticise, for the views expressed seem to me thoroughly sound.

When the constitution of this Committee was announced I welcomed it as likely to carry out its difficult task in a broadminded, unbiased, and businesslike fashion; my objection that women were inadequately represented was expressed by others as well, and

<sup>1</sup> Since the above was written it has been announced that the Rep. <sup>1917</sup> shortly be issued by the Stationery Office as an octavo volume.

the subsequent appointment of Miss Gilliland was undoubtedly wise. Others complained that no modern language teachers were on the Committee; I regarded this as an advantage. The Committee has worked extremely hard, and the work it has done is an enduring monument to its conscientious efforts and good judgment. It has earned the gratitude of all teachers and students of modern languages, and of the community at large.

The arrangement of the report is admirable and the style clear and convincing; at times it rises to real eloquence. The historical account of the study of modern languages in Great Britain makes interesting reading, and the chapter on the neglect of modern studies should distress and arouse, as it is meant to do. The value of modern studies is stated soberly and without exaggeration; the importance of making the public appreciate their value is vigorously emphasised. The means of instruction are then reviewed, with careful detail in the case of the schools and of the universities; far-reaching proposals for improvement are made which deserve, and will doubtless receive, the fullest consideration. That very serious question, the supply and training of modern language teachers, is adequately discussed. There is a relatively brief, but none the less helpful, chapter on method; and finally there are some valuable suggestions for the conduct of examinations. The views of the Committee are summed up in a series of conclusions; these are followed by their recommendations, printed in full below.

To the report are added "reservations" by four members of the Committee who disagree with some of the views expressed in the report as regards the treatment of modern languages in schools. Appendix I. is a list of witnesses examined by the Committee; Appendix II., a letter and *questionnaire* (has our language no term for this?) sent out to business men and others; Appendix III., tables showing the hours of work, salaries, and pensions of teachers in Austria, Denmark, France, Germany, Norway, and Sweden; Appendix IV., a letter received from thirty-one university professors and readers.

It is possible here to dwell only on a few of the points which the Committee seems to me justified in emphasising; and I shall confine myself to those which are of direct interest to teachers in schools.

Perhaps the most valuable feature of the treatment of modern languages in schools is that the Committee realises that languages are not the only subjects or even the main subjects that must be learnt, and that we must use school time to the best advantage. Pupils represent many types of linguistic ability;

some can learn several languages with profit, but many cannot hope to learn more than one language well, and it is a grievous waste of time to learn several badly. The teaching should be intensive; there must be a daily lesson, at least during the first two years. The pupil must be linguistically ripe for the first foreign language—that is, he must have a good grounding in English. The Committee, after stating the pros and cons with great fairness, arrives at the conclusion that for the average pupil the age of eleven or twelve represents the best time for starting the first foreign language; and I believe this to be a very important educational reform. The minority of four do not agree with this; but they utterly fail to show—as they should have done—that it is possible to give a daily lesson in French to the average child under eleven without an undesirable extension of the teaching hours or the serious neglect of other subjects. A great deal of the time given to languages in our schools has been grossly wasted—and nowhere more than in the "junior departments," with their two or three periods a week for French.

As regards method, I note with pleasure that the Committee has arrived at this conclusion: "We regard the principles of the 'Direct Method' as sound, although liable to misapplication by unskilful or ill-qualified teachers. The importance of mere fluency of speech should not be overrated. Grammatical accuracy and scholarship should be demanded. Pupils should be encouraged to read for themselves and to co-operate actively in their own instruction. A main object of language teaching should be to fit the pupils to learn languages for themselves. The work in schools should be carefully planned, and, so far as possible, a consistent method should be followed throughout each school."

Particularly valuable are the sections devoted to advanced studies in secondary schools. Here, and elsewhere, the Committee sets up an ideal of humane learning which marks a great advance on the narrowly philological tendency that has so long prevailed. Reference is made to the regulations of the Board of Education, and the Committee is in accord with the widely expressed opinion that English should be regarded as a main subject in the modern studies course. As regards Latin, the Committee considers its position under the scheme of the Board of Education as "somewhat anomalous, and the Board has found some difficulty in furnishing a logical justification for its inclusion among modern studies."

Phoneticians have every reason to be satisfied with the ample recognition which their subject receives. It is true that the Committee

does not go so far as the letter from the thirty-one, in which it is suggested that a lecturer in linguistic pedagogy "might be attached to a Department of Phonetics," one of the few touches of unconscious humour in these pages. As if methods of teaching modern languages were concerned only with acquiring proficiency in talking!

There is a great deal more in the report that I cannot even touch upon; it is not because I do not appreciate it or because I deem it less important than what I have been able to refer to. The whole report repays careful study from beginning to end. Personally, I thank the Committee for it most warmly, and I offer my special congratulations to the chairman, Mr. Stanley Leathes, and to the secretary, Mr. A. E. Twentyman.

#### RECOMMENDATIONS.

The Committee recommends that:—

(1) Modern studies be energetically fostered by all public and local authorities concerned with education and with public and private business.

(2) Means be taken to bring the business world into closer touch with education.

(3) An Advisory Committee be set up for the purposes mentioned in recommendations 17 and 41-45.

#### FOR THE PUBLIC SERVICE.

(4) The scheme of the Treasury Committee on the examination for Class I. of the Home Civil Service be adopted in its essentials so far as modern studies are concerned.

(5) The systematic and scientific study of foreign countries be encouraged by the Foreign Office.

(6) A higher language qualification be required for the general Consular service and for student interpreters for the Far East.

(7) Before going out, student interpreters receive an intensive training at home in the language and the phonetics of the country to which they are allotted.

(8) More opportunity be given to officers of the Army and Navy to acquire knowledge of modern foreign languages.

(9) A better and fuller use should be made of women trained in modern languages.

(10) Phonetics form part of the training of all entrants to the public service whose duty will lie in foreign countries, and, with this in view, special assistance should be given to institutions for phonetic research.

(11) The Government should undertake a survey of African languages.

#### FOR THE BUSINESS COMMUNITY.

(12) The business community in every considerable centre of foreign trade or of manufacture for foreign markets should take steps, in conjunction with the education authorities, to further the formation of institutes of languages, both for full-time and for part-time study.

(13) Business men should individually and collec-

tively encourage the study of foreign languages by those members of their staff who, possessing good business ability, have shown capacity for such study by arranging for their full-time attendance at an institute of languages either at home or abroad.

(14) Industrial and commercial organisations dealing with foreign countries should make a fuller and more adequate use of the supply of women of trained intelligence now proceeding from our universities and the upper forms of secondary schools with an adequate knowledge of foreign languages.

(15) Commercial houses and industrial firms should bring to the knowledge of the school authorities the opportunities which present themselves from time to time for those who have special aptitude for foreign languages.

#### FOR THE UNIVERSITIES.

(16) Neither Latin nor Greek be compulsory for an arts degree in any of our universities.

(17) A scheme be prepared and sanctioned by legislation for the gradual increase within ten years from the end of the war of the staff for modern studies in the universities. The new professorships and lectureships should be some of language and philology, some of literature, some of the history and institutions, some of the economics of the five principal European countries. The number suggested is fifty-five professorships and 110 lectureships, the allowance for French being half as much again as for each of the other four languages. The allotment of these posts and first appointments to them should be entrusted to the Advisory Committee mentioned in recommendation 3 above.

(18) Modern studies at the universities comprehend for each of the five principal European countries, language, history, economics, literature, and philology, as an interdependent whole, with a good general basis of scholarship and knowledge, but considerable latitude of specialisation in one direction or another. Recent and present-day conditions of each country studied be included so far as possible.

(19) Spanish, Italian, and Russian studies receive attention at the universities commensurate with that given to German.

(20) Interchange of professors with foreign countries be arranged whenever possible.

(21) The proposals of the Committee of the Garton Foundation (1916) receive the careful attention of the proper authorities with a view to suitable action.

(22) Encouragement be given to research in little-known foreign languages.

#### FOR SECONDARY SCHOOLS.

(23) School teachers of modern studies should be encouraged to qualify themselves for university posts.

(24) Secondary schools in any school area should be differentiated according to the type of instruction, higher or lower, that they aim at providing.

(25) Secondary schools in any school area should be graded according as they are equipped to supply higher instruction in one or more of the main subjects of school instruction or in none.

(26) Transfer from one school to another after the

First School Examination should be facilitated when the needs of the pupil demand it.

(27) The authorities should take measures to diminish the evils arising from late entry, from irregular entry, and from early and irregular leaving, especially in those secondary schools where the average school-life is shortest.

(28) Facilities be given for the study of Spanish, Italian, and Russian in schools, so far as can conveniently be arranged.

(29) In every school giving instruction in modern foreign languages a good reference and lending library of books be built up.

(30) Teachers of modern languages be granted facilities to visit foreign countries from time to time, and periodical leave of absence on full pay with an allowance for expenses be given for this purpose.

(31) The system of interchange of assistants between British and foreign schools be largely extended and so developed as to include other languages than French and German.

(32) Classes for modern languages should not be unduly large.

(33) The hours of teachers using the direct method should not be too long.

(34) Means be taken to encourage visits of school children in foreign countries, the interchange of children between foreign homes and British, and, if possible, the interchange of school children between Britain and friendly neighbouring countries.

#### FOR SPECIAL INSTITUTIONS OF MODERN STUDY.

(35) The London School of Oriental Studies receive the continuous and liberal support of Government without detriment to other existing schools for Oriental study.

(36) An institution be established in London, similar to the School of Oriental Studies, for the intensive study of the greatest possible number of European tongues, with the geography, resources, industries, and all valuable information concerning the minor countries.

(37) In the several great centres of population opportunities should be given for the intensive study of the languages most important in the district, with phonetic instruction and the aid of foreign assistants.

(38) The London School of Economics be a centre for the study of the products, the industry, the trade, and the economic conditions of the chief European countries, and also of North and South America, Asia, and Africa.

#### FOR PART-TIME INSTRUCTION.

(39) The existing system of evening and other part-time classes in modern languages for seniors and adults be further developed, and continuity through the summer months be maintained so far as possible, allowing for a reasonable holiday.

(40) It should be made worth the while of the teachers for such classes to undergo some training if they have not already had sufficient.

#### FOR SCHOLARSHIPS, ETC.

(41) Subventions be granted to enable students at the universities to pass their long vacations abroad

and, if possible, some period of their course at a foreign university.

(42) Studentships be granted to enable promising students to spend a year in study abroad after graduation; and for students of exceptional merit this subvention be continued for a further period.

(43) Students who, in the course of their preparation to become teachers in elementary schools, show high ability for modern studies be given studentships to enable them to carry their study further after their training is completed.

(44) Scholarships should be provided from a Parliamentary grant to maintain throughout an honours course in modern studies at a university those who before entry show high excellence in modern European languages with their history and literature.

(45) The regulation and allotment between the various universities and university colleges of the above scholarships, subventions, and studentships be entrusted to the Advisory Committee mentioned in recommendation 3.

#### FOR THE TRAINING OF TEACHERS.

(46) Teachers of modern languages for secondary schools should be practically trained in schools authorised for the purpose, and should receive systematic instruction in phonetics.

(47) A test of qualification for teaching modern languages in secondary schools should be set up by Government and a certificate granted, and it should be made worth the while of teachers to obtain this certificate.

(48) After, say, five years' experience in teaching, a higher certificate should also be awarded to teachers as the result of a searching test.

#### FOR EXAMINATIONS.

(49) The Secondary-School Examinations Council and the Civil Service Commissioners give their attention to the improvement and development of examination tests in modern subjects.

(50) In examinations oral as well as written tests should be used wherever possible, and not only pronunciation, speech, etc., but also the benefit derived by the candidate from his study should be thereby tested, at least at the later stages of education.

(51) In the Second School Examination classical, mathematical, and scientific candidates be encouraged to pass a translation test in one or more modern languages, and those who pass or pass with distinction in such tests receive a corresponding endorsement on their certificates.

(52) At the earliest suitable opportunity after the close of the war the Board of Education, the Scotch Education Department, and the Civil Service Commissioners should jointly undertake an inquiry into the methods employed in French State and university examinations such as those for the *Agrégation* and the *Licence*.

#### ARTIFICIAL LANGUAGES.

(53) A Committee be appointed to inquire into the potentialities of artificial languages and the desirability of encouraging the development and use of one.

## THE EDUCATION BILL IN COMMITTEE.

**T**HIE long-anticipated Committee stage of Mr. Fisher's Education Bill, deferred by reason of a great national exigency, began on May 7th. Up to the time at which we write only the first four clauses of the Bill have been considered in Committee. Clause 1, dealing with the general educational duties of counties and county boroughs, was added to the Bill unaltered, though not until some interesting objections had been raised. The phrase used regarding public education, that it is to be available "for all persons capable of profiting thereby," was held by some to savour of a narrowly vocational ideal, by which a boy's whole career might be prejudged; and it was pointed out that the phrase might actually be read so as to exclude defective children from the benefits of public education. This matter will come up again later. A proposal that free secondary education should be made available for all persons desirous of such education was negatived, but Mr. Fisher undertook to insert words directing local authorities to ensure that poverty should not debar from secondary education any child for whom it was desired.

Clause 2, which provides for the further development of elementary education by means of central schools or classes, and advanced instruction in ordinary schools, was strengthened by an amendment proposed by Mr. Fisher himself. An attempt to safeguard the position of non-provided schools by inserting the words "unless adequate provision is otherwise made" was defeated, Mr. Fisher pointing out that these schools are safeguarded by Clause 29. Sensitiveness on the question of vocational instruction was again shown by a proposal to omit the paragraph relating to practical instruction suitable to the "ages, capacities and circumstances of the children," and the words "abilities and requirements" were therefore substituted for "capacities and circumstances." A useful amendment providing that the advanced instruction is to be for the more intelligent as well as for the older children was agreed to.

A good deal of discussion naturally arose on Clause 3, which provides for the establishment of continuation schools. Mr. Fisher withheld proposals to entrust the development of these schools to Part III. authorities within their areas. Another proposal was to substitute the phrase "courses of education" for "courses of instruction" as the expressed purpose of these schools. Here again the Committee showed itself sensitive on the question of vocational

instruction, for it was held that "courses of instruction" might be construed narrowly. A somewhat amateurish discussion ensued upon the difference between education and instruction, but Mr. Fisher pointed out that, though vocational instruction might certainly be illiberally conceived, there is no necessary antagonism between liberal and vocational instruction. When the Committee resumed next day, Sir James Yoxall's suggestion that "study and instruction" should be substituted for "instruction" was adopted. We hope the change will prove worth the time that was spent upon evolving it. The next problem was that of freeing the phrase "physical training" from any possible military bias, but the phrase was finally upheld as it stood. The question of the position of boys training for sea service, in whose case the general provision for continued education obviously needs modification, was next raised, but Mr. Fisher here gave an undertaking that the point would be dealt with later. An amendment to the effect that Part III. authorities should so far as possible be associated with Part II. authorities in the management of continuation schools was accepted, and the clause was then added to the Bill.

Clause 4 provides for the consultation of Part III. authorities by county councils in the working out of schemes. An amendment was agreed to providing that the councils should also have regard to the existing and prospective supply of non-provided schools and colleges. Another amendment, of considerable interest, providing that the local authority, before submitting schemes, should consider any representations made by parents, or other persons or bodies interested, had not been disposed of at the time at which we write.

It seems obvious that every atom of outside influence will be needed in order to strengthen Mr. Fisher's Parliamentary position with reference to securing the necessary time for getting on with the Bill.

## AMERICA AND THE WAR.

**N**O country in the world has been more consistently and honourably pacific than America, but in no country are pacifists so reasonable, or so ready to accommodate their theories to palpable facts. Ardently as Mr. Bryan strove to keep America out of the war he now declares that the best way out is to go straight through; lavish as was Mr. Ford in equipping missions of conciliation, he is now concentrating his enormous energies and resources on all sorts of military appliances;

zealous as were the Trustees of the Carnegie Endowment for International Peace, they now pass unanimously the following motion, which is a delightful example of the adaptation of unexpected means to an end persistently pursued : "Resolved : That the Trustees of the Carnegie Endowment for International Peace, assembled for their annual meeting, declare hereby their belief that the most effectual means of promoting durable international peace is to prosecute the war against the Imperial German Government to final victory for democracy, in accordance with the policy declared by the President of the United States."

Although, no doubt, there are in America some "hyphenated" Germans who are disloyal to the country of their adoption, there are others who, though they retain an affection for the old Germany which existed before the canker of Prussianism destroyed the German soul, are entirely devoted to the cause of the Allies. Among these, Mr. Otto H. Kahn, of New York, holds a prominent and distinguished place. Born in Germany and trained in the German Army, he went to America while yet the old Emperor lived, and while yet German policy showed some respect for conscience. From time to time he visited Germany and noted how it was rapidly being corrupted by militarism and materialism. He has described the process in a vigorous pamphlet entitled "The Poison Growth of Prussianism," which he is distributing widely among his fellow-Teutons in the States and elsewhere. The indictment of Prussia is calm, but conclusive; it is made from a wealth of intimate knowledge.

The "American Association for International Conciliation" is another converted, or, at any rate, semi-converted, pacifist organisation. It publishes a monthly bulletin entitled *International Conciliation*, of which No. 123 lies before us, together with a list of the contents of the previous two dozen issues. The contents of Nos. 1-97 (April, 1907, to January, 1916) are veiled in a decent obscurity; they presumably are not suited to present-day circumstances. The leading feature of Nos. 98 to 123 is the publication of a large and valuable collection of documents relating to the war. The complete set provides a fine selection of sources. No. 123, for instance, gives the texts of : (1) Mr. Lloyd George's speeches on December 14th, 1917, and January 5th, 1918; (2) Mr. A. Henderson's Statement on Labour's After-War Economic Policy; (3) British Labour's War Aims; (4) British Labour's Address to the Russian People; and (5) President Wilson's Address to Congress on January 8th, 1918, on America's Terms of Settlement.

## TEACHERS REGISTRATION COUNCIL AND THE EDUCATION BILL.

THE Teachers Registration Council has given careful consideration to the Education Bill, and has authorised the following statement :—

(1) The Council is in cordial agreement with the main purpose of the measure, namely, to extend the scope of educational facilities, especially with regard to the better care of children under school age, the prevention of child labour for profit, the abolition of half-time employment before the age of fourteen, and the training of young persons between the ages of fourteen and eighteen in day continuation schools.

On educational grounds the Council welcomes the proposal to include in the curriculum of public elementary schools, at appropriate stages, practical instruction suitable to the ages, capacities, and circumstances of the children. It also approves of the proposal to make special provision for the older children of such schools, and will welcome any feature of the curriculum of the proposed day continuation schools which may be introduced for the purpose of awakening the interest of pupils in matters relating to their daily work.

While holding the view that practical subjects may thus be introduced on educational grounds, the Council would deplore any attempt to introduce an exclusively vocational element into the curriculum of the public elementary, central, or day continuation schools. All these institutions, together with secondary schools and universities, will render the best possible service to industry and commerce by imparting principles rather than the technique of a workshop or business. The schools of the country cannot provide for their pupils that technical training which is to be gained only by actual experience in offices and workshops. Moreover, the aim of a national system of education includes a preparation for the right use of leisure as well as for efficient work. To this end educational institutions of every type must seek to promote the physical, intellectual, and moral welfare of their pupils so that they may be fitted to enter, as fully as their circumstances permit, upon the heritage of the life and thought of humanity. Since this training is most fruitful during the years of adolescence, the Council welcomes the proposal to maintain regular educational supervision over young persons up to the age of eighteen, with the added opportunity for preparation which will result from the abolition of child employment for wages under twelve, the enforcement of whole-time attendance at school up to fourteen, and the systematic care of infants below school age.

(2) The Council further approves the effort to harmonise the work of the local authorities which were set up under the Education Act of 1902. Experience has shown that, while the independence of these authorities should be maintained, there should be some adequate means for securing a national standard of efficiency, though not of detailed uniformity, in educational work. Such means may be found in the proposal to call upon authorities to submit schemes for the approval of the central body, and also in the development of voluntary co-operation between authorities for special purposes, such as the provision of

means of higher education and funds for scholarships. In this connection the Council welcomes the abolition of the limit hitherto prescribed in regard to the money raised by a council for purposes of higher education, and hopes that the practice will be encouraged of giving grants from the rates to universities and other institutions for higher education and research. The Council would welcome also a higher and more uniform standard in the salaries paid to teachers of the same status in different areas, since the national supply of teachers is adversely affected by a low rate of payment in any district such as tends to diminish the general repute and prospects of the work and to discourage many young persons of ability from entering upon it. As the supply of teachers is a national concern, vital to the success of any education measure, the Council expresses the hope that there may be required as a necessary part of every scheme submitted by a local authority some evidence of proper provision for the maintenance of a supply of qualified teachers, and that proper provision shall be held to include an adequate scale of salaries and such other conditions as will encourage young persons of ability to regard teaching as a form of service worthy of their powers.

(3) The Council approves the proposal to call for information respecting schools and educational institutions not liable to inspection by any Government department. Such a survey it holds to be desirable, not only in the interests of national education in general, but also in those of many schools and institutions which are performing valuable, though officially unrecognised, service to the community. While it has no wish to see inefficient schools continued out of regard for private interests, the Council hopes that every encouragement may be given to schools which are found to be doing satisfactory work, although they are not controlled or aided by the central or local education authority. Such schools form a valuable part of our national educational facilities and provide that variety of opportunity and of method which has always distinguished English education from the formal schemes of more rigidly organised States.

## ITEMS OF INTEREST.

### GENERAL.

THE President of the Board of Education has received from the King's private secretary, Lord Stamfordham, the following letter, which will, Mr. Fisher is sure, be a source of pride and encouragement to school authorities, teachers, and pupils alike:—"It has given the King and Queen much pleasure to visit recently schools of various types, and thus gain an insight into the daily life of the rising generation at work and at play. Their Majesties are aware of the magnificent response which the educational service throughout the country has made to the demands of the present time, not only in its contribution to the fighting forces, but also in the assistance which it has rendered in many kinds of important war work. Above all, they wish to express their admiration of the self-denial and devotion of the teachers, who, it is evident, while training the mind and body of their

pupils, recognise the importance of the formation of character. These visits have brought home to the King and Queen the keenness and patriotism of the youth of the country. They realise the unselfish and hearty manner in which boys and girls, inspired by the example of their teachers, have formed War Savings Associations, subscribed money for charitable purposes, and by their handiwork contributed to the personal needs and comforts of the troops. Their Majesties feel that the nation can be proud of its young sons and daughters, whose example during this great war augurs well for the future of our race. I am commanded to request you to convey to the school authorities and teachers the hearty congratulations of the King and Queen upon the admirable manner in which the public service of education is being maintained, the progress of which their Majesties will ever watch with interest and sympathy."

THE Board of Education has issued new Circulars (1,046 and 1,047) showing how the Military Service Act recently passed modifies the protection afforded to teachers and educational officials under the terms of Circular 1,032 of February last. Men who were liable to military service before the new Act was passed are, with certain special exceptions, to be called up forthwith if they are in Grade I., or if they are in Grade II. and were under thirty-two years of age on January 1st, 1918. The Minister of National Service will consider recommendations of the Board of Education regarding men whose retention in the education service is deemed vitally important; and with a view to such consideration men up to the age of forty-three who were liable to military service before the new Act was passed are to be summoned for immediate medical examination. It is stated that the Board of Education will not feel justified in recommending a man's retention in the education service unless satisfied that he is absolutely essential. Men who are now liable to military service for the first time by the raising of the age limit under the new Act will be called up for medical examination and grading in the ordinary course as and when their age-groups are summoned. Those who are placed in Grade III. or Grade II. will be entitled to the same protection as the younger men; those who are placed in Grade I. will be called up, subject to the provisions as to exceptional retention on the recommendation of the Board.

THE Board of Education has issued a revised edition, dated April 19th, 1918, of the regulations under which Supplementary Grant will be paid to local education authorities for elementary education. The substance of the regulations is still, of course, the well-known formula:  $(36s. \times \text{average attendance}) + \frac{1}{3} \text{ of teachers' salaries} + \frac{1}{3} \text{ of remaining expenditure} - \text{produce of } 7d. \text{ rate}$ . If the ordinary grants normally payable do not amount to the sum represented by this formula, a supplementary grant is given to make it up to that amount. The alterations in the regulations are nearly all verbal. None of them, except one relating to fractions of a pound, introduces any change in the calculation of the amount of the grant. A schedule has, however, been added to the

regulations giving the text of the Board's minute of January 18th, 1918, prescribing minimum salaries, and of an explanatory circular issued therewith, and a reference to this schedule has been inserted in one of the regulations.

THE council of the Teachers' Guild has passed the following resolution:—"That this council expresses the strong hope that the Government will find it possible to proceed with the Education Bill No. 2 at the earliest possible moment, and to pass it into law without substantial amendment. In particular, the council hopes that Clause No. 10 will be approved in its present form."

A SUMMER school of speech training at Stratford-on-Avon is to be held again this summer. The course will open on August 3rd and last until August 17th. Prof. Walter Ripman is giving special courses of English and French phonetics. Miss Fogerty is taking the voice production, diction, and dramatic courses. There will be short courses of afternoon lectures on metrics, on the history of dramatic representation, and on the psychology of expression.

A SUMMER vacation course for students and teachers of French will be held at University College, London, from August 2nd to 18th inclusive. Supplementary courses for the more advanced study of methods of language-teaching and of phonetics will be held. Particulars of all courses may be obtained by sending a stamped addressed foolscap envelope to the Secretary, University College, London (Gower Street, W.C.1).

THE "Report of an Inquiry by Inspectors of the Board of Education into the Teaching of French in London Secondary Schools," to which we directed attention in our issues for January and February last, has been reprinted. Copies are obtainable either through any bookseller or direct from H.M. Stationery Office at Imperial House, Kingsway, London, W.C.2; 7 Peter Street, Manchester; or 1 St. Andrew's Crescent, Cardiff, price 3d., or by post 4d.

THE Bill introduced by Lord Southwark in the House of Lords to sanction a decimal system of coinage marks a minimum demand. Nobody who believes in reform at all could ask for less. Weights and measures are untouched, the pound sterling is to remain the unit, and there is only one new term—the mil." The four denominations are thus pound, florin, ten mils, and mil; and the proposal is to place the existing silver and bronze coins by four larger coins (double florin, florin, half florin, and quarter florin), two nickel coins (ten-mil piece and five-mil piece), and four bronze coins (four-mil piece, three-mil piece, two-mil piece, and mil piece). If the Bill ever becomes law, its effect upon the teaching of arithmetic will be distinctly beneficial, for it will amplify the earlier stages, enable the pupil to pass more quickly into the more advanced stages, and, by giving him a better grasp of decimal fractions, help him to a better understanding of higher arithmetic. It will, in fact, save time and facilitate study. It will save time in two ways. The time required to extend the four simple rules so as to

embrace notation below unity will be much less than the time now spent in mastering the money tables, the compound rules, reduction, and practice; and, as a general rule, the examples worked will involve a smaller number of processes and figures. A distinction must, however, be made here between written arithmetic and mental arithmetic. As Sir Frederick Bramwell pointed out in letters to the *Times* in March, 1899, there is every reason for thinking that the mental arithmetic involved in simple shopping and travelling would be more difficult under the new system. Everything taken together, the amount of time saved will clearly depend on the extent to which money enters into the course of study. It will affect the younger pupils more than the older, and girls more than boys; for girls, as a rule, do more household accounts and less algebra and geometry than boys. The general opinion seems to be that a year's work will be saved. The passing of the Bill would mean the slaughter of innumerable text-books. But this would not be widely regretted.

A COMMITTEE composed of delegates from organisations of salaried and professional women workers and representatives of groups of women not yet organised has been formed to consider the best means of promoting co-operation between the several vocations and the different grades of workers within each calling. A public meeting is to be held at the Small Queen's Hall, Langham Place, London, on June 6th, at 7 p.m. The main subject for discussion will be the importance of promoting efficiency and securing for professional women workers the due material recognition of trained efficiency. Miss Haldane, who will take the chair, will speak on the general position.

THE Western Australian report for the year 1915 on education has reached us. There were approximately 600 Government schools, with an average attendance of sixty-five scholars per school and an average staff of a head-teacher and an assistant, and the cost per head was £6 os. 5d. Fifteen years ago there were 240 similar schools with a similar enrolment at a cost of £4 9s. per head. In 1915 there were 124 private schools, 83 of which were Roman Catholic and 26 undenominational. Perth Modern School, with 254 pupils, and Goldfields High School, with 169 pupils, with eight technical schools for about 2,000 students, represent secondary education. The University, which was founded in 1911, with a staff of eight professors, four lecturers, and six demonstrators, had more than 200 students, of whom 40 per cent. had not matriculated.

MISS MARGARET MEREDYLL has achieved a noteworthy success at the London School for the Blind, Swiss Cottage, we learn from the *Child*. She has been able to bring much joy into the lives of blind children by a course in eurythmics, so that they express all the pleasures of anticipation when the music for the exercises begins. The entirely blind have in many cases no natural sense of balance, some of them cannot even stand on one foot. They experience fear at unaccustomed movements. One class began work in September, 1916; a year later a second class for older patients was commenced.

The experiment indicates that eurythmics is of value to the blind in the systematic development of hearing, touch, and movement, and in an acquisition of the feeling of balance as well as some appreciation of the beauty of form.

Miss E. L. HEWLETT conducted an investigation upon "Children's Interest in Daylight Saving" in four boys' and five girls' elementary schools in Swansea. The children (543 boys and 672 girls) were required to write an unprepared essay upon the subject. Three-quarters of them mentioned as an advantage the saving of illuminants, only a fifth referred to the saving of money. No other advantage was mentioned by a fifth of the writers. The boys mentioned the increased time for play, for work, and for walks more often than the girls; and the girls noted that the arrangement is healthy more often than the boys. Among the disadvantages mentioned the first place was given to the fact that children go to bed late; this was noted by nearly a quarter of the boys and more than two-fifths of the girls. The other disadvantages were insufficient rest, inability to sleep at night, and lateness at school, all of which were mentioned more frequently by girls than boys. Some children approved the action of the Swansea Education Authority in beginning the school-day at 9.30 instead of 9, for "we get less late girls and we can sleep longer."

PHYSICAL chemistry is to the fore in the April issue of *Science Progress*. Sir Edward Thorpe, in an account of Prof. Arrhenius's recent work on the viscosity of pure liquids, gives an admirable résumé of present knowledge of the manner in which the viscosity of liquids is related to their other physical properties and to their chemical nature. Prof. W. C. McC. Lewis contributes part ii. of a useful "popular science" article on "The Structure of Matter," which deals with the structure of the atom according to the theories of Sir J. J. Thomson and Sir E. Rutherford, and with the Braggs's researches on the inner structure of crystalline solids. In an article on "The Electro-culture of Crops" Messrs. I. Jörgensen and W. Stiles state that all workers on this subject have failed to realise (1) the need for quantitative measurement of the electric discharge; (2) that a stimulus may act differently on the plant at different stages of its life; and (3) that the effect of a stimulus depends on its intensity and on the time for which it is applied, and may appear a considerable time after it is applied. Mr. Stiles has also an article on "Permeability" in relation to plant physiology. Major R. A. Marriott writes on "The Geological History of the Downs and the Escarpments of the Weald," and maintains that there is no real evidence that a continuous dome of chalk ever covered the Weald. On the contrary, he suggests that the sandstones, sands, clays, etc., of the Weald "once formed an island or bank, laved by the sea in the depths of which the chalk was being deposited," so that when the Wealden strata were gradually forced up to form the present anticlinal, the chalk fringing it was uplifted at the same time. The article, which is illustrated by a good photograph of Ditchling Beacon and by sketch-maps

and sections, should provoke an animated retort from upholders of the orthodox view.

THE New South Wales *Education Gazette* for January contains the announcement that future issues will be limited, in view of war conditions, practically to Departmental notices and instructions. The issue contains ten photographs illustrating various forms of school activity "down under." Two schools united in a geographical excursion to the top of a hill for a lesson in physical geography. Other schools use the spinning-wheel and locally invented accessories for the spinning of yarn and the knitting of soldiers' socks. One school maintains a lawn in the playground, while another has an extensive front garden for flowers and fruits. In one case the picture shows hats and garments made as a part of the course in domestic science.

THE Osmania University of Hyderabad was established as a vernacular University, we learn from *Indian Education* for January, 1918. Urdu has been selected as the medium of instruction, not only because it is the official language of the State, but also because it is the only language more or less understood throughout the dominions, especially in those urban areas from which most of the students will be drawn. English is to be a compulsory study. The new University is an experiment. If it succeeds in imparting modern knowledge with greater facility than the other universities, while giving its students a less practical command of the English language, universities using the other principal vernaculars in India will probably be established. As a first step a translation bureau has been established to render into Urdu works on physical science, mathematics, philosophy, political science, economics, history, and law. Draft curricula are in preparation.

THE problem of corporal punishment has not been solved in the schools of India, says the Madras *Educational Review*. The darkness of illiteracy prevails all over India, and home influences are, in general, of little value in the training of the characters of the boys. Classes are large, and some pupils have to be driven to exert their powers, and corporal punishment is the goad. Indian conditions do not favour detention, since the school hours do not fit in with the traditional meal-times, and so frequent detention leads to under-feeding and ill-health. A system of fines is in vogue in some schools, but this punishment falls on the parent and the family, since the fine may be equivalent to the cost of the food for two days. Corporal punishments are, therefore, frequently used, and have been found to be effective. On the other hand, it is hoped that this form of chastisement will be gradually abolished when the Indian educational system has been improved by a more careful selection of teachers, a reduction in the size of classes, and the application of the principle, "Boys are not for examinations, but examinations for boys."

STAMMERING is not very prevalent in English secondary schools, but pupils who stammer under the stress of class-room strain and do not stammer in the freer intercourse of the playground are sufficiently numerous to present one of the minor difficulties

school-life. *Indian Education* for February contains a brief account of the work of the late Mr. Izawa, of Japan, whose curative course lasted about three weeks, and was, as a rule, completely successful. The cure begins with training in deep diaphragmatic breathing, accompanied by a mouth exercise and voiceless practice of the *ha he ho* vocal formations. After a day or so voice is added to the exercises. The purport of this work is to train the breathing, vocal and abdominal muscles, and to begin the formulation of a habit of co-ordinating out-breathing with sound production.

THE Gary system of continuous use of school buildings has been the subject of heated controversy. The *School Review* of Chicago announces the fate of the system in New York City thus:—"In administering the oath of office to the Board of Education's seven members, Mayor Hylan pronounced the doom of the Gary system: 'In appointing you to the Board of Education I have neither asked nor have I expected any pledge to do or not to do any particular thing, nor to favour any particular plan or device of school administration except the elimination of the so-called Gary system and the erection of new schools as soon as possible, all of which was pledged in the platform upon which I was elected, which is a mandate to carry out this pledge. The people of this city elected a new administration to do three things for the schools—eliminate the Gary plan, build more schoolhouses, so that every child might properly be accommodated, and reduce part time. Betterment of the schooling of our children underlies all three.' Of the £3,800,000 set aside for the extension of the Gary plan, about £1,200,000 is as yet unexpended. All contracts not actually entered into are stopped. No more money will go into the system, and schools are being 'de-Garyised.'"

MR. F. E. MOOPY contributes to the *Chicago School Review* for March an article on the "Correlation of Professional Training with Teaching Success." The test of professional training was average marks during the normal school course, that of teaching success the average salary of the teachers. The general conclusions drawn from the investigation tend to confirm the prevalent impressions about the possibilities of teaching success. Poor work in the normal schools generally leads to poor success as a teacher, and professional success usually follows successful work during training; yet there is a large proportion of the teachers who do not fall into either the lower or the higher categories. Some teachers achieve success during their training and fail later; others are successful teachers, but mediocre students. The author concludes that more notice should be taken of personality, tact, professional interest, co-operation, and loyalty during the training course, so that students may be advised with a greater degree of accuracy as to their probable chances of success as teachers. In our view personality is probably the most important item in the equipment of the teacher. Lack of it is a constant and continually increasing hindrance to success, especially in the case of the form teacher as opposed to the specialist.

#### SCOTTISH.

THE question of higher education for those who aspire to be leaders in commerce continues to receive attention both from the business side and the academic or professional side. The leading Chambers of Commerce have had the matter under consideration, but the published reports of their discussions show no clear appreciation of the national position. There is still too much talk of the practical resource, the flexibility, and the sound common-sense of the Britisher, as if Providence had dowered us with these qualities to save us hard and sustained and scientifically directed effort. It is tragic that all the lessons of the war have failed to rouse the nation to the after-war task that lies before it. Our commercial men have failed to realise that our main opponents will put their last ounce of co-operative, scientifically directed effort into this campaign for the markets of the world, as they have done and are doing into their great offensive. There are, however, hopeful signs. Academic opinion has, on the whole, taken a truer measure of the situation, and Aberdeen and Edinburgh University authorities have resolved to establish a degree in commerce. Glasgow University, on the other hand, influenced by the *laissez-faire* attitude of the commercial community, has failed to visualise the situation. It is still seeking for some compromise within the limits of the present M.A. degree. Business men have some excuse for their attitude of mistrust towards university education, which has remained too much isolated from the stream of practical life. But if they are convinced this tendency cannot be cured, their proper course is to set up great institutions on the model of the *Handelschule* at Cologne, Hamburg, and Leipzig. German commercial magnates found the universities too academic for their purpose, and, instead of sitting still, they established and endowed these great commercial colleges at their own expense, and have refused to accept any Government aid because it meant paralysing Government interference. It is these institutions, and not the universities, that are responsible for most of the "peaceful penetration" of Germany.

SIR JOHN STRUTHERS has issued a circular to teachers and managers informing them that, in consequence of the military situation, still further demands must be made upon the man-power in the schools. All teachers up to the age of forty-three, unless they have already been certified as unfit for military service, will shortly be called up for medical examination, and all who are placed in Grade I., or who, being under the age of thirty-two, are placed in Grade II., will be called up for military service. Provision is made for an appeal in certain cases to the Director of National Service if the calling up would, in the opinion of the managers, seriously cripple the school. The great majority of teachers will be prepared to give a loyal response to this call. At a crisis like this there should be few, if any, indispensables. The schools can without men carry on with difficulty and with loss, but without their help in the Army the nation may go under.

THE Council of Edinburgh University has inaugurated a campaign for the "putting down" of old men. In order that "the University Court should become, and remain, a really live institution," it has decreed that the assessors on the Court of the Chancellor, Senatus, and Council should retire on reaching the age of sixty-five, and that no assessor should serve for longer than two consecutive terms of four years each. It recommends also that the Chancellor shall not hold office longer than twenty years in all, nor after the age of seventy. Professors and lecturers are also required to retire on reaching the age of sixty-five, and the Principal is not to hold office for more than twenty years in all. These proposals are generally in the right direction, but the members of the Council must be very simple if they think "a live university" is conditioned by the age of its governors and teachers. It is personality that counts, not age. Deadheads are as common among the young as among the aged.

THE *Educational News*, after a long and honourable though somewhat chequered history, has been merged together with the *Class Teacher* and the *Secondary Education Journal* in the new *Scottish Educational Journal*. The new journal will be the official organ of the United Educational Institute, and will endeavour to voice the opinion of all grades and classes of teachers. The first number opens well. The paragraphs are bright and appetising, the leading article is dignified without being either ponderous or pontifical, and the other contributions are selected with true journalistic instinct for questions of the hour. The retention of "The London Letter" will please old readers, as the writer of it has a never-failing *flair* for the interesting and piquant. Our best wishes go with the new venture.

MR. MUNRO, Secretary for Scotland, in a letter to the Scottish Trade Union Congress, places the position of the Education Bill fairly and squarely before the nation. It is impossible to proceed, he declares, unless the Bill is an agreed-upon measure. To endeavour to secure that, he is prepared to give way on the question of a *non ad hoc* authority, though still profoundly convinced that it is in the ultimate interests of education. He indicates that he is prepared to introduce a new Bill embodying the *ad hoc* principle provided he receives assurances of support for the county area and for the educational provisions now before the country. Teachers will heartily support the Secretary for Scotland's attempt at compromise. They are whole-hearted supporters of the *non ad hoc* authority, but they are not prepared to sacrifice the educational provisions in order to retain it. They will have no compromise on the area. The county or nothing is their policy, because without that the educational provisions would be mere eye-wash, and as futile as German peace treaties.

THE University Courts of St. Andrews and Glasgow have resolved to oppose the ordinance promoted by Aberdeen University to set up a degree in education (M.Ed.). Their reasons for this course were that it was undesirable to set up a degree in one university to be known as Master of Education, while in the

other universities it was entitled Bachelor of Education. There is some force in this contention, yet the general tendency of Scottish universities which it exemplifies, namely, to look with a critical and envious eye on every forward step of each individual university, is thoroughly bad. It paralyses action, stops progress, and results in endless friction. The unity of action required for all advances in the Scottish universities is a very real bar to national efficiency.

#### IRISH.

AN advertisement appeared in the Press on May 11th announcing that applications for registration by intermediate teachers could now be made to the Assistant Commissioners of Intermediate Education. The regulations for the register, which will come into force on July 31st, have been published by His Majesty's Stationery Office, and can be obtained for 1d.

THE register will consist of five columns. Column 1 will state the register number; column 2 the teacher's name and date of original registration; column 3 his university degree or its equivalent, as provided in the regulations, and in the case of an honours degree the subject and class in which the honours were obtained; column 4 will state his university diploma (or its equivalent) in the theory and practice of education, and column 5 the institution or school in which he has obtained his qualifying experience. The length of qualifying experience is to be three years.

FOR the next seven years, however, there will be transitional conditions of registration, and a teacher may be registered if he has attained the age of twenty-four and can produce satisfactory evidence of teaching for five years. Up to 1920 three years' teaching will be sufficient, but in both cases the time will be reduced by one year if the applicant has a university degree or its equivalent, and by another year if he has an approved diploma in the theory and practice of education. The teaching must have been in an Irish intermediate school and in intermediate classes. The registration fee is one guinea.

Such is a brief summary of the requirements for registration. All Irish intermediate teachers should carefully study the official document drawn up by the Registration Council and issued by the Government. It completes the work of framing rules for a register as provided by Mr. Birrell's Act of 1914, which clearly contemplated this register as a basis for the distribution of the £40,000 grant.

THE rules and schedule containing the programme of examinations for 1919 of the Intermediate Education Board were laid on the table of the House of Commons early in May. They lie there for forty days, and after that time, unless Parliament objects to them, they become binding for the year. The chief alterations for 1919 are concerned with mathematics and experimental science. The latter are due to the revised rules and syllabus of the Department of Technical Instruction. The former are designed to meet objections that have been raised to the conditions of passing in mathematics. Arithmetic, which was previously coupled with algebra, is made a separate and

compulsory subject. For boys, algebra and geometry are coupled together, and, in the senior grade, algebra and trigonometry. To pass in mathematics all candidates must pass in arithmetic, and boys must also pass in algebra with geometry or (in the senior grade only) in algebra with trigonometry; girls must pass in algebra or geometry. In algebra with geometry and in algebra with trigonometry, candidates to pass must obtain at least 30 per cent. of the aggregate pass-marks, and not less than 20 per cent. of the pass-marks allotted to each of the two subjects; for the purpose of this rule twenty honour marks shall be taken as equivalent to thirty pass-marks. The changes in science are more elaborate. The chief point seems to be that in physical and natural science candidates may pass in one section, and may also, under special conditions, obtain an exhibition or prize by taking only one section. The pass-student must have at least seventy hours' instruction in the science course selected, and the honour-student 100 hours in the junior grade and 120 hours in the middle and senior grades.

OTHER important changes are as follows: Drawing is a separate pass subject; music is an honour as well as a pass subject; in mathematical subjects in the senior grade all marks above 15 per cent. will count for prizes and exhibitions; the rules about a bonus school grant are omitted, and schools which meet only five days per week will be allowed to increase the number of pupils' attendances for the purposes of the inspection grant by one-fifth. In the programme we note an alteration in the periods for Roman history, which will now date from the foundation of the city in the junior grade to A.D. 70 in the senior grade; in English and Irish history the junior-grade period is extended to 1660 instead of 1603; the scale of marks is changed in English, fewer being given to literature and more to history and geography (which is now to include physical geography); in modern language honours in the middle grade, more marks are given for composition and fewer for translation into English, and the courses in practical mathematics, manual instruction, and drawing are altered.

THE Department of Agriculture and Technical Instruction has issued (1) regulations for scholarships in agriculture, horticulture, forestry, and creamery management to be competed for in August; (2) rules and syllabus for the session 1918-19 of the Albert Agricultural College, Glasnevin; (3) the programme of the Irish Training School of Domestic Economy, St. Kevin's Park, Kilmacud, Stillorgan, Co. Dublin; (4) rules for trade scholarships to be awarded this summer, and (5) the second number for this year of its Journal, with interesting articles on various Irish industries.

#### WELSH.

THE Report of the Board of Education under the Intermediate Education Act for the year 1917 indicates no changes of method or developments of plan in the work of the schools during the year. It pays tribute to the way in which the schools "carry on" in increasingly difficult circumstances, with a deepening sense of responsibility and of duty to the nation.

Teachers will recognise the description as correct if applied to the upper part of the school, on which the possible imminence of active service casts a new and real dignity; but the report fails to do justice to the other side of the picture—the lack of tone, the absence of careful home training, and the increased self-assertion and unruliness of many who enter the lower Forms. Probably this is found in different measure in different places; in some it is certainly present to a marked degree.

THE Board's advocacy of the system of only two external examinations, one at about sixteen years of age for matriculation and leaving-certificate purposes, and one two years later to test post-matriculation work, leads it to attribute to the present "excessive external examination" most of the defects that can be found in the Welsh secondary-school system. It may, however, be doubted whether even a yearly external examination is an unmixed evil. If the examination is free from "catch" questions, and aims at finding out rather what the pupil does know than what he does not, a wide choice of subjects being allowed in the questions; and if, above all, the teachers will resolutely decline to "prepare for" specified examinations, while teaching the subject to a level above the standard of the examination syllabus, then the external examination need have no terrors for the pupil, and will give him an opportunity of showing that he possesses a most valuable faculty—that of tackling and dealing with an "unseen" problem within his range by the aid merely of what he has remembered and what he can think out at the moment. The curse of external examinations is not that they may be annual, but that it is often necessary either to choose between several at the same stage or to prepare for two or more of them.

THE claims of domestic subjects, music, and Welsh on the time available for teaching are strongly urged, and a call is made for more elasticity in the timetable, some subjects being taught for fewer periods in a week, and without regard to examination requirements. But the teacher in charge of a subject is entitled to ask how he can be expected to plan a consistent course of instruction throughout the school if in some of the classes the subject may be relegated to a position of comparative unimportance. There is a certain minimum number of subjects and a certain minimum standard of attainment in them which must be included in a secondary education that can be called satisfactory.

THE case of languages is mentioned, and complaint is made that Welsh suffers. The old English grammar-school standard was two ancient languages, Latin and Greek, and two modern, say French and German. The practice in Wales now is: Latin, together with either French or Welsh; Greek and German are rarities. The sentence, "It is somewhat difficult to explain why in Wales, where the Sunday school forms such an important part of the lives of thoughtful young men and women, the study of Greek has declined in recent years," needs explaining, especially as it refers to the absence of Greek as an obstacle to the establishment of advanced courses. A

young men's or young women's class in a Sunday school, presumably interested in Hellenistic Greek, and either prepared throughout to read, say, the Gospel of John, or exercising any influence on the advanced courses of the neighbouring intermediate schools, would be a development worth seeing.

It is satisfactory to note that all the schools under the Intermediate Education Act were so carried on as to fulfil the conditions for grants under the Act. The number of pupils in all Wales rose to 16,955 from 16,100 in the previous year. Girls are in the majority, numbering 9,404; their superiority in numbers has been maintained and progressively increased since 1904, when they first outnumbered the boys.

THERE are still ten headmasters and eleven head-mistresses receiving salaries of less than £300 a year. The average salary of a headmaster is £397, of a head-mistress £360, of an assistant-master £163, and of an assistant-mistress £125. Three assistant-masters and seventy-four assistant-mistresses received the scandalous salaries of less than £100 a year. These figures do not include the "Fisher grants," which have been administered in some cases strictly according to their intended purpose, in others, it is not too much to say, deliberately diverted therefrom. In any case, the whole of the supplementary grants would not nearly balance the increased cost of living caused by the war and the events of the years previous to it. Wales is getting its secondary education cheaply—at the cost of the teachers.

IN the Chancery Division Mr. Justice Eve has authorised the trustees of the estate of the late Richard Beaumont Thomas to pay out of the residuary estate the sum of one thousand guineas for the laboratory fund of South Wales University College, in fulfilment of the testator's promise of a donation of this amount.

IT was announced early in May that the special committee set up to deal with the appointment of a successor to Principal Griffiths had decided to postpone the appointment for a year, one of the professors being chosen as acting principal in the meantime. A choice from a wider field was expected to be possible after the war. But a week later it was said that the vacancy was to be filled at once, and the *Western Mail* asked, "What's in the wind?" The salary attached to the post is to be raised from £1,000 to £1,500.

THE list of prospective candidates for the Welsh University seat continues to grow. The latest additions are the names of Lieut. Ernest Evans, of Aberystwyth, and Dr. Fisher, who, it is said, is to have one of the University seats secured for him, the Welsh seat being suggested as suitable.

THE Welsh Members of Parliament adopted in April the proposals of the Executive Committee of the Llandrindod Conference for the establishment of a National Council of Education, but in view of the lack of support for the scheme from the local education authorities, and the opinion of Alderman D. H. Williams and Mr. E. T. John that a demand for Welsh Home Rule was likely, in the present state of public opinion, to receive favourable consideration,

the Executive decided to report that the objects of the conference would best be promoted by an agitation for a measure conferring complete autonomy on Wales, whereupon the M.P.s followed suit in May. The plain English of this resolution is that the zeal for education in Wales cannot of itself carry on the movement, and that once more education is to be dragged at the tail of politics. It is significant that a parallel movement is concerned with the development of a demand for a Welsh Ministry of Health into one for complete Home Rule. Place beside these facts the article by the Rev. D. S. Jones on Welsh Non-conformity in the *Dysgedydd*, in which he says: "Many people believe that Nonconformity is gradually losing its hold on the life of the nation, and I see no hope of its recruiting its strength until it throws over the yoke of the politician." There are those who would apply the last sentence to education also.

## THE HISTORY OF SCIENTIFIC THOUGHT.

*A Short History of Science.* By W. T. Sedgwick, professor of biology, and H. W. Tyler, professor of mathematics, Massachusetts Institute of Technology, Cambridge, U.S.A. xvi+474 pp. (New York: The Macmillan Co.) 12s. 6d. net.

THIS admirable work is a sign of the generally awakening desire for a more humanistic education of those undergoing technical training. In the process of reconstruction we have to look forward to a large increase in the number of those entering industrial and civic life with a basic education in science rather than in the humane studies, and the question will thus become more urgent how a suitable training in the humanities can be imparted to the student of science. This problem has long been before American educationists, and has been approached by including in scientific training courses in the history of science. A very large number of these courses are now being delivered in the universities, medical schools, and technical colleges of the United States, and the volume before us is the outcome of one of these courses.

Profs. Sedgwick and Tyler themselves would probably be the last to claim such courses as a complete solution of this difficult educational problem. But systematic instruction in the history, and perhaps even more in the method, of science will go far to remove the reproach against the man of science of indifference to the wider fields of human activity and incapacity to form a dispassionate estimate of the place of his own studies in the history of thought.

The authors have produced a scholarly and well-written account of the history of elementary and applied mathematics and astronomy from the earliest times. The biological and medical sciences are scarcely touched upon, and the history of chemical and geological science but lightly sketched. The work is thus perhaps most likely to appeal to students of engineering, though it will be welcomed in the library of every serious student of the history of science. Profs. Sedgwick and Tyler have scarcely done their own excellent narrative style full justice by including a large amount of quoted matter. We suggest that in a subsequent edition this material might be restricted to first-hand authorities.

We have to make two minor criticisms of the method adopted. First, the work, along with nearly every modern history of science, has devoted consider-

able space to Oriental scientific thought. Now, it is the special business of the historian to demonstrate continuity, and most Oriental systems, however interesting to the specialist, are not as yet sufficiently explored to make their inclusion in a general narrative profitable to the reader. To attempt to include them is but to withdraw attention from the main plan. The second defect which, again, the book shares with most others on the subject, is the practical silence in which a thousand years of the "Middle Ages" are passed over. We hold no brief for the study of medieval science, and it is true that during all those centuries there were few or no contributions to scientific thought. But an ideal history of science should trace the course of scientific thought as a continuous whole. The deterioration of the human mind during certain ages is a phenomenon of immense importance, and the nature and causes of that deterioration are by no means without their lesson for our time and circumstances.

These are, however, but very minor defects in a valuable and useful book, which will immediately take its place among the small list of first-class works on the subject of which it treats, and will form an incentive to a wider study of the history of science. Profs. Sedgwick and Tyler are to be heartily congratulated on its appearance.

CHARLES SINGER.

### A PHILOSOPHICAL FARRAGO.

*Plutarch: Select Essays.* Vol. i. Translated, with introduction, by T. E. Tucker. 206 pp. Vol. ii. Translated by A. O. Prickard. xix+336 pp. (Oxford Library of Translations.) (Clarendon Press.) 3s. 6d. net each.

Few classical schoolmasters have either the leisure or the inclination for reading Plutarch in the original, and the massive volume of Philemon Holland's translation of the "Moralia" is inclined to deter the most dauntless of readers. The present translations are therefore very welcome; that by Prof. Tucker appeared in 1913, and contains an excellent introduction, in which Plutarch is compared with writers of the so-called "Augustan" age of English literature such as Pope, Addison, or Steele. Mr. Prickard's selection is very similar to that made by C. W. King in 1882, but his translation is far more elegant and readable than King's. And classical scholars ought to read Plutarch—not on end, but to "dip into him," as Montaigne advised—for he is a storehouse of much curious information, and serves to throw sidelights upon many subjects of intimate concern to the classical scholar. When we listen, for example, as we do in these essays, to men like Cebes and Simmias discussing in the cultured home of Epaminondas, we remember that Pindar was a Theban, and that our conventional idea of Boeotian stupidity is a little unkind.

The essays chosen by Mr. Prickard are "On the Genius of Socrates," "The Pythian Dialogues," "Delay in Divine Punishment," "On the Soul," "On Superstition," and "On the Face on the Orb of the Moon," and they vary from the nature of garrulous *obiter dicta* to the grave treatment of a grave subject. When added to such things as the "Advice to Married Couples," "On Bringing up a Boy," "On the Student at Lectures"—to quote at random from Prof. Tucker's volume—they certainly form a very representative selection of Plutarch's style. Some will be inclined to say that they contain much interesting matter mixed up with a deal of nonsense; and it must be admitted that Plutarch shows a lack of artistic restraint both in the bewildering number of his interlocutors and in the profusion of their remarks; but to the scholar everything is interesting, and he will be very grateful to the translators for these two volumes.

### THE TEACHING OF HANDWRITING.

*Cremer's Unit System of Teaching Handwriting.* By P. T. Cremer. 49 pp., with 18 plates and illustrations. (Dublin : Browne and Nolan, Ltd.) 3s. 6d. net.

THE unit which gives its name to the Cremer system is not a unit of construction—an element of form—but a unit of distance, being, in fact, one-fourth of the slant height of such small letters as *a* or *i*. Using this unit, the author provides a framework of lines which standardises the proportions of the letters and their connecting links. He compares and contrasts his system with that of Mulhäuser—a system very popular about the middle of the nineteenth century. Discarding Mulhäuser's "pothooks and hangers," Mr. Cremer has made finer and more precise the network of rhombuses within which the Mulhäuser script was written. The actual network need not, however, be drawn, though it is assumed to be present to fix the unit and the slope, and to enable geometrical skeletons of the letters to be built up. It is, in fact, in reducing the script alphabet to four fundamental types of letters, and devising four groups of guiding lines, that the most original part of the system consists.

The system therefore stands or falls with its principle of guiding lines. If fixed lines to regulate the writing are expedient at all, either for the beginner or the advanced pupil, and especially if they are needed to determine the width as well as the height of the letters, then Mr. Cremer has devised a valuable system. But the use of guiding lines of any kind other than a single horizontal base line is opposed to modern professional opinion. School medical officers tell us that it is injurious for young children in the infant school to write between lines. The numerous experiments in handwriting that have been carried out in England and America point to the conclusion that the fewer the guiding lines the better. A single horizontal line is apparently the best of all. Here modern research supports the practice of the scribes of the Middle Ages, who, in writing their beautiful scripts, used but one guiding line, not necessarily to write upon, but to secure a good horizontal alignment. Mr. Cremer is aware of the existence of the modern tendency to revert to that period of fine penmanship, for he devotes about two pages to it under the title of "Print-Script," but the very example he gives—a degraded form of print—shows that he has missed the spirit of the movement. That spirit, which really springs from William Morris, is best seen embodied in the work of such modern masters of the craft as Mr. Edward Johnston and Mr. Graily Hewitt.

If therefore the current belief in the necessity for freedom in handwriting be sound, the teacher would be unwise to adopt the Cremer system for teaching purposes. The book might, however, enable him to analyse and standardise for himself the style of handwriting he proposes to teach.

### RECENT SCHOOL BOOKS AND APPARATUS.

#### English.

*Coleridge: Select Poems.* Edited by S. G. Dunn. 127 pp. (Oxford University Press.) 1s.—The considerable part of Coleridge's poetry printed in this volume is preceded by a preface so modern that it discusses the light thrown by the war on our views. The war indeed will light up many an old favourite, and probably Coleridge's verse, which is more universal than that of most poets, will be read with deeper attention. For the output of the poet, like that of Francis

Thompson, was small, and in a few years the glory had departed. A very few notes are added, and a modicum of criticism, and this is well, for the reader's voice supplies to Coleridge, as to Spenser, the best criticism. It is curious that a poet's own sense of his degradation should be one of his claims to recognition; but the young speedily recognise in literature the *longum intervallum* between the human penitent and the preacher. Coleridge preached, but he also despaired, and "The Ancient Mariner" and "Dejection" cannot die. He dreamed also.

*Mackay of the Great Lake.* By C. E. Padwick. 144 pp. (H. Milford.) 3s.—This is a bright and clear account, helped out by pictures and maps, of the life of a great missionary. Apart from the religious intention of the book, the narrative will hold a boy's interest, for the story, as befits its subject, is manly all through. And if a boy be led to read a few more missionary stories, he will but be learning more of British grit and dauntlessness in face of immense difficulties. The missionary note is always present, but it is not unduly pressed, and this, considering the book is for the young, is as it should be.

### History.

*The Expansion of British India, 1818-1858.* By G. Anderson and M. Subedar. xii+196 pp. (Bell.) 4s. 6d.—This volume is "a source book of Indian history," and it is the first of a set of three, all dealing with the period 1818-58. The other two are intended to treat of native politics and the East India Company's commerce respectively. The book is interesting and valuable to students of Indian history. It ought to be preceded, however, by a similarly documented study of the period 1756-1818, when the really crucial expansion took place. The term "source" is interpreted by the compilers with unusual and regrettable laxity. The first "source" quoted—on the need of a frontier policy as first revealed by Napoleon's projects—is Sir Alfred Lyall's "British Dominion in India," published in 1893! If this is a "source," what is a secondary authority? A large part of this book is devoted to the Indian Mutiny, but with "references to unpleasant happenings intentionally omitted." It might be objected, first, that the Indian Mutiny does not properly come within the scope of the volume as indicated by its title, and, secondly, that the Indian Mutiny with the unpleasant happenings left out is an episode unknown to history altogether.

*The Beginnings of Modern Europe, A.D. 1250-1450.* By Ephraim Emerton. xiv+550 pp. (Ginn.) 7s. 6d. net.—It is thirty years since Prof. Emerton, of Harvard University, published his remarkable "Introduction to the History of the Middle Ages." The book met with an immediate and great success, because it combined profound scholarship with unusual simplicity of treatment, and at the same time showed a rare comprehension of the spirit of the period with which it dealt. The appreciative welcome which this preliminary sketch received encouraged Prof. Emerton to continue his history, with rather fuller detail and for a distinctly more advanced class of students, for the central period of the Middle Ages, viz. A.D. 800-1250. This volume provides one of the very best of available surveys of the important epoch in question. Now at last this third volume brings the study down to the dawn of modern times. It will be hailed with enthusiasm by Prof. Emerton's disciples on both sides of the Atlantic. It manifests the same high qualities as its predecessors. Like them, it is topical rather than chronological in its mode of treatment. It deals with such themes as the rise of the modern State, the

decline of the Empire and the Papacy, the evolution of a middle class, and the Renaissance in Italy and in Northern Europe. We unreservedly commend this masterly work to all students of the period of transition from medieval to modern times.

### Geography.

*The Oxford Geographies. The British Empire.* New illustrated edition. By A. J. Herbertson, R. L. Thompson, and O. J. R. Howarth. 112 figures, 14 pages of photographs, 256 pp. (Clarendon Press.) 2s. 6d.—Teachers will welcome the improvement introduced into this new edition, as into reprints of the other Oxford Geographies, by Mr. O. J. R. Howarth. Nearly half the book is devoted to the British Isles; the African parts of the Empire are introduced by a general discussion of the whole continent, but British North America is not related to the rest of the American continent. In the treatment of India, in the chapter headed "Provinces and Towns," Kashmir receives a longer notice than Bengal. That the book contains these and other instances of inequality of treatment at the hands of such experienced writers merely indicates how difficult it is to write a book on the geography of the British Empire.

### Mathematics.

*Mathematics for Engineers.* Part i. By W. N. Rose. xiv+510 pp. (Chapman and Hall.) 8s. 6d. net.—This is the first part of a treatise which is intended to embrace all the mathematical work needed by engineers in their practice and by students in all branches of engineering science. The present volume deals with algebra, mensuration, graphs, and plane trigonometry, and an examination shows that on the whole little within the range of these subjects which is likely to be of use to the engineer has been omitted. A very large part of the book is devoted, and rightly so, to graphs. All equations can be solved more or less accurately by graphical methods, and these are described in detail. There is, however, no reference to the solution by the aid of the templates of standard curves which are now procurable. A useful chapter is that on the construction of the practical charts and nomograms which figure so largely in recent technical literature. The numerous examples are in almost all cases of a practical character, and in every respect the book is one likely to prove useful to the class of students for whose benefit it has been produced.

## EDUCATIONAL BOOKS PUBLISHED DURING APRIL, 1918.

(Compiled from information provided by the publishers.)

### Modern Languages.

"Selections of Russian Poetry." Edited, with notes, etc., by B. A. Rudzinsky, assisted by Stella Gardiner. With an introduction by Sir Donald Macalister, K.C.B. 108 pp. (Blackie.) 2s. 6d. net.

Goncharov: "Men-servants of Other Days." Edited by Nevill Forbes. (Oxford Russian Plain Texts.) 80 pp. (Clarendon Press.) 1s. 6d. net.

Koroléenko: "In the Night, Easter Eve." Edited by Nevill Forbes. (Oxford Russian Plain Texts.) 96 pp. (Clarendon Press.) 1s. 6d. net.

Krilov: "Select Fables." Edited by E. G. Underwood. (Oxford Russian Plain Texts.) 64 pp. (Clarendon Press.) 1s. 3d. net.

"Serbian Grammar." By Dragutin Subotic and Nevill Forbes. 244 pp. (Clarendon Press.) 7s. 6d. net.

"Capitulos Escogidos de V. Blasco Ibáñez." By E. Alec Woolfe. 188 pp. (Harrap.) 2s. net.  
 "A First Spanish Course." By Profs. E. C. Hills and J. D. M. Ford. 340 pp. (Harrap.) 4s. net.  
 "La Vida de Vasco Núñez de Balboa." By M. J. Quintana. 116 pp. (Harrap.) 1s. 6d. net.

Jean-Jacques Rousseau: "Du Contrat Social; ou, Principes du Droit Politique." Edited by Prof. C. E. Vaughan. (Manchester University Press Publications: Modern Language Texts.) 260 pp. (Longmans.) 5s. net.

Stepmann's French Series for Rapid Reading (new volumes):—De Bréhat: "Les Ravageurs de Plouneal"; "Une Main d'Enfant" (adapted). Eyma: "Pontiac; Le Roi Philippe" (adapted). Mae: "La Hache et le Pot-au-feu; Friquet et Friquette; Mademoiselle Sans-Soin" (adapted). Töpffer: "La Vallée de Trient; Le Grand Saint-Bernard" (adapted). Erckmann-Chatrian: "Le Trésor du Vieux Seigneur" (adapted). Prosper Mérimée: "Les Mécontents" (adapted). (Macmillan.) 6d. each.

"Swedish Self-Taught (Thimm's System)." By W. F. Harvey. Enlarged by Carl Cederlöf. Third edition. 112 pp. (Marlborough.) Cloth, 3s. net; wrapper, 2s. 6d. net.

"Graduated Exercises in Commercial French." By F. Marsden. (Pitman.) 2s. net.

"French Course." Part i. By V. F. Hibberd. New edition. (Pitman.) 1s. 3d. net.

#### English Language: Grammar and Composition.

"A Tale of Two Cities." By Charles Dickens. 362 pp. (Blackie.) 1s. 4d.

"A History of American Literature." Edited by W. P. Trent, John Erskine, S. P. Sherman, and Carl van Doren. In 3 vols. Vol. i. now ready. xx+584 pp. (Cambridge University Press.) 15s. net.

"The Life and Poems of William Cartwright." Edited by R. C. Goffin. xliv+208 pp. (Cambridge University Press.) 6s. 6d. net.

"Johnson and Goldsmith and their Poetry." By Wm. H. Hudson. 160 pp. (Harrap.) 1s. 6d. net.

"Macmillan's Pocket Series of American and English Classics." Edited with introductions and notes. (Macmillan.) Increased in price from 1s. 3d. net to 1s. 6d. net.

#### Geography.

"Macmillan's Geographical Exercise Book: India." With Questions by B. C. Wallis. (Macmillan.) 8d.

#### Science and Technology.

"Aeronautics in Theory and Experiment." By W. Cowley and H. Levy. 296 pp.+plates. (Edward Arnold.) 16s. net.

"Technical Handbook of Oils, Fats, and Waxes." By P. J. Fryer and F. E. Weston. Second edition. (Cambridge Technical Series.) x+280 pp. (Cambridge University Press.) 10s. 6d. net.

"An Introduction to the History of Science." By Dr. Walker Libby. 304 pp. (Harrap.) 5s. net.

#### Miscellaneous.

"Obadiah and Jonah." In the Revised Version. Edited by H. C. O. Lanchester. (Cambridge Bible for Schools and Colleges.) 76 pp. (Cambridge University Press.) 2s. net.

"The Schoolmaster's Year Book and Educational Directory, 1918." Sixteenth annual issue. 1420 pp. (Deane: The Year Book Press, Ltd.) 15s. net.

"More Mother Stories." By Maud Lindsay. 192 pp. (Harrap.) 4s. 6d. net.

"Macmillan's 'Two-Term' Class Record Book." (Macmillan.) 2s.

#### CORRESPONDENCE.

The Editors do not hold themselves responsible for the opinions expressed in letters which appear in these columns. As a rule, a letter criticising any article or review printed in THE SCHOOL WORLD will be submitted to the contributor before publication, so that the criticism and reply may appear together.

#### Bolshevik Multiplication.

THE system of multiplication, described by Mr. Twigg in the May number of THE SCHOOL WORLD, used by peasants in some districts of Russia is fairly well known. The exposition of the method is best set out by a concrete instance, and I take for this purpose one of Mr. Twigg's examples, namely, finding the product of 28 and 19.

To effect the multiplication two columns of numbers are written down, the numbers in one column being got by the repeated halving of one factor (say 28), omitting all remainders, and those in the other column by the repeated doubling of the other factor (19). Then the sum of those numbers in the second column which are opposite the odd numbers in the first column give the required product. The result reads thus:—

28	{ 19 38 76 152 304
14	
7	
3	
1	

And the required product is 76+152+304.

The explanation is that the halving of the numbers in the left-hand column serves to express it in the binary notation, and the repeated doublings of the other number provide a series from which the sum of the selected terms gives the required product. Thus from the first column we have

$$28 = 0 + 0 + 2^2 + 2^3 + 2^4.$$

$$\therefore 28 \times 19 = (0 \times 19) + (0 \times 19) + (2^2 \times 19) + (2^3 \times 19) + (2^4 \times 19) \\ = 76 + 152 + 304 = 532.$$

In this way multiplication is reduced to addition.

W. W. ROUSE BALL.

THE principle involved in the method of multiplication used by certain Russian peasants is that if a number be expressed as the sum of powers of 2—i.e. in the binary scale—the only multipliers of the different powers which can appear are either 0 or 1. Thus:—

$$40 = 0 + 0 \times 2 + 0 \times 2^2 + 1 \times 2^3 + 0 \times 2^4 + 1 \times 2^5.$$

$$28 = 0 + 0 \times 2 + 1 \times 2^2 + 1 \times 2^3 + 1 \times 2^4.$$

$$9 = 1 + 0 \times 2 + 0 \times 2^2 + 1 \times 2^3.$$

If, then, we wish to multiply any number, such as 25 by 40, we have

$$\begin{array}{rcl} 25 \times 40 & = & 25 \times 0 = 25 \times 0 = 1000 \\ & & + 25 \times 2 \times 0 + 50 \times 0 \\ & & + 25 \times 2^2 \times 0 + 100 \times 0 \\ & & + 25 \times 2^3 \times 1 + 200 \times 1 \\ & & + 25 \times 2^4 \times 0 + 400 \times 0 \\ & & + 25 \times 2^5 \times 1 + 800 \times 1 \end{array}$$

When the multiplication is exhibited in this way we see at once why in performing the addition some of the multiples of 25 are ignored. J. B. DALE.

THE interesting method of multiplication given by Mr. Twigg in the May issue of THE SCHOOL WORLD depends upon the fact that any number may be resolved into a series of powers of 2. Thus:—

$$57 = 32 + 16 + 8 + 1 = 2^5 + 2^4 + 2^3 + 2^0; \quad 26 = 2^4 + 2^3 + 2^1.$$

Example 1. Multiply  $x$  by  $2^n + 2^{n-1} + 2^{n-2} + \dots + 2^1 + 2^0$ ,  $a, b$ , and  $c$  being in descending order.

- (i) Place  $2^a + 2^b + 2^c + 1$  at the head of the left-hand, and  $x$  at the head of the right-hand, column.
- (ii) Halve the left-hand number, omitting any fraction, and double the right-hand number.
- (iii) Repeat the halving and doubling until the number on the left is unity.
- (iv) The required product is obtained by adding all the numbers on the right except where the corresponding left-hand number is even.

L.	R.
$2^a + 2^b + 2^c + 1$	$x$
$2^{a-1} + 2^{b-1} + 2^{c-1}$	$2x$
...	...
...	...
$2^{a-c} + 2^{b-c} + 1$	$2^c x$
...	...
...	...
$2^{a-b} + 1$	$2^b x$
...	...
...	...
1	$2^a x$

Product:  $(2^a + 2^b + 2^c + 1)x$

Example 2. Multiply  $x$  by  $2^a + 2^b$ ,  $a$  being greater than  $b$ .

L.	R.
$2^a + 2^b$	$x$
...	...
...	...
$2^{a-b} + 1$	$2^b x$
...	...
...	...
1	$2^a x$

Product:  $(2^a + 2^b)x$

W. E. HARRISON.

Handsworth Technical School, Birmingham,  
May 4.

[Other correspondents have replied to Mr. Twigg, but the letters printed above explain sufficiently the Russian system of multiplication.—Eds.]

#### The Education of Engineers.

In the review of my book on "The Education of Engineers" you appreciate my remark that "the best education for an engineer is found in the natural and instinctive pursuit of manual toil accompanied by study at a technical school." What university educational authority would make "manual toil" the basis of its policy? None, and you partly give the reason.

While in agreement with what you say on the subject of London University internal evening students, I feel that it is not my duty to direct attention to these "valuable points" in a scheme which, on your own showing, is not a success. The matriculation, you imply, is insane. I agree. Wherever the university idea opens its avenues, it places at the portal two lions—classics and science—one or other of which must be appeased before matriculation can be passed. Now, I ask you, what is the objection to killing one of these brutes, and by this means so opening out the road to realities that the other may be left to die? In order not to be misunderstood, I would conclude the allegory with a quotation: "Out of the eater came forth meat, and out of the strong came forth sweetness."

H. G. TAYLOR.

Munition Training Dept., King's College,  
Strand, W.C.2.

MR. TAYLOR appears to have omitted the principal point in the review, viz. that he had damaged his case by exaggeration, and, in the writer's opinion, this exaggeration is confirmed by his letter. There

will also be many people who will decline to accept as their guide in any reconstruction scheme one who does not feel that it is his duty to direct attention to valuable points in our present educational system, since such points must obviously form the basis of future progress in education.

THE REVIEWER.

#### Schoolboy Labour on the Land: Appeal to Parents, Headmasters, and Boys.

THE military situation has necessitated calling up a large number of agricultural labourers, which will seriously deplete the available labour during the coming hay, corn, and potato harvests. It is of vital importance that the harvest of these crops should be successfully secured this year. This success will depend largely upon boys at public and secondary schools who have reached an age that will enable them to do useful work on the land.

The extent to which farmers are counting on their help is shown by the fact that demands for over 17,000 boys have already been received at this Ministry, and there is no doubt that these numbers will be largely increased when the full effect of the calling-up for military service has been appreciated by the farmers. Of these numbers not fewer than 3,000 will be required during June and July, and a further 3,500 are needed for October for potato-lifting if suitable accommodation can be arranged.

In view of the above facts, I am reluctantly compelled to appeal to schools to release during term-time such groups of boys as may be necessary for getting in the harvest. This is a time of national crisis, and the ordinary considerations of education have not the same force as in normal times. As I have pointed out, it is necessary to provide men for the Army and it is necessary to provide labour to take their places on the farms, and I must urgently appeal to parents, headmasters, and boys to give all the help they can.

In view of my representations as to the urgency of the national need, the President of the Board of Education concurs in this appeal, and is issuing a circular on the subject to secondary schools in England and Wales.

All offers of service must be made through the headmasters of the schools. Headmasters who have not already received the regulations, and who can offer boys of sixteen and over, should communicate with this Ministry.

A. C. GEDDES.  
Ministry of National Service, West-  
minster, S.W.1, May 20th.

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